KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

bizhub C20

2008.09

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

FIELD SERVICE TOTAL CONTENTS

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SAFETY AND IMPORTANT WARNING ITEMS

Read carefully the safety and important warning Items described below to understand them before doing service work.

IMPORTANT NOTICE

Because of possible hazards to an inexperienced person servicing this product as well as the risk of damage to the product, KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. (hereafter called the KMBT) strongly recommends that all servicing be performed only by KMBT-trained service technicians.
Changes may have been made to this product to improve its performance after this Service Manual was printed. Accordingly, KMBT does not warrant, either explicitly or implicitly, that the information contained in this service manual is complete and accurate.
The user of this service manual must assume all risks of personal injury and/or damage to the product while servicing the product for which this service manual is intended.
Therefore, this service manual must be carefully read before doing service work both in the course of technical training and even after that, for performing maintenance and control of the product properly.
Keep this service manual also for future service.

DESCRIPTION ITEMS FOR DANGER, WARNING AND CAUTION

In this service manual, each of three expressions "⚠ DANGER", "⚠ WARNING", and "⚠ CAUTION" is defined as follows together with a symbol mark to be used in a limited meaning.
When servicing the product, the relevant works (disassembling, reassembling, adjustment, repair, maintenance, etc.) need to be conducted with utmost care.

⚠ **DANGER: Action having a high possibility of suffering death or serious injury**

⚠ **WARNING: Action having a possibility of suffering death or serious injury**

⚠ **CAUTION: Action having a possibility of suffering a slight wound, medium trouble, and property damage**

Symbols used for safety and important warning items are defined as follows:

△ :Precaution when servicing the product.	General precaution	Electric hazard	High temperature
⃠ :Prohibition when servicing the product.	General prohibition	Do not touch with wet hand	Do not disassemble
● :Direction when servicing the product.	General instruction	Unplug	Ground/Earth

SAFETY WARNINGS

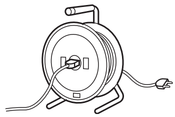
[1] MODIFICATIONS NOT AUTHORIZED BY KONICA MINOLTA BUSINESS TECHNOLOGIES, INC.

KONICA MINOLTA brand products are renowned for their high reliability. This reliability is achieved through high-quality design and a solid service network.
Product design is a highly complicated and delicate process where numerous mechanical, physical, and electrical aspects have to be taken into consideration, with the aim of arriving at proper tolerances and safety factors. For this reason, unauthorized modifications involve a high risk of degradation in performance and safety. Such modifications are therefore strictly prohibited. the points listed below are not exhaustive, but they illustrate the reasoning behind this policy.

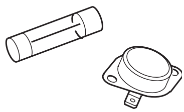
Prohibited Actions

⚠DANGER

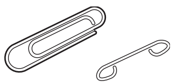
- Using any cables or power cord not specified by KMBT.



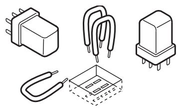
- Using any fuse or thermostat not specified by KMBT. Safety will not be assured, leading to a risk of fire and injury.



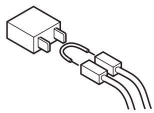
- Disabling fuse functions or bridging fuse terminals with wire, metal clips, solder or similar object.



- Disabling relay functions (such as wedging paper between relay contacts)

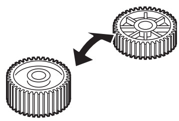


- Disabling safety functions (interlocks, safety circuits, etc.) Safety will not be assured, leading to a risk of fire and injury.



- Making any modification to the product unless instructed by KMBT

- Using parts not specified by KMBT



[2] POWER PLUG SELECTION

In some countries or areas, the power plug provided with the product may not fit wall outlet used in the area. In that case, it is obligation of customer engineer (hereafter called the CE) to attach appropriate power plug or power cord set in order to connect the product to the supply.

Power Cord Set or Power Plug

⚠ WARNING

- Use power supply cord set which meets the following criteria:
  - provided with a plug having configuration intended for the connection to wall outlet appropriate for the product's rated voltage and current, and
  - the plug has pin/terminal(s) for grounding, and
  - provided with three-conductor cable having enough current capacity, and
  - the cord set meets regulatory requirements for the area.

  Use of inadequate cord set leads to fire or electric shock.



- Attach power plug which meets the following criteria:
  - having configuration intended for the connection to wall outlet appropriate for the product's rated voltage and current, and
  - the plug has pin/terminal(s) for grounding, and
  - meets regulatory requirements for the area.

  Use of inadequate cord set leads to the product connecting to inadequate power supply (voltage, current capacity, grounding), and may result in fire or electric shock.

- Conductors in the power cable must be connected to terminals of the plug according to the following order:
  - Black or Brown: L (line)
  - White or Light Blue: N (neutral)
  - Green/Yellow: PE (earth)

  Wrong connection may cancel safeguards within the product, and results in fire or electric shock.

[3] CHECKPOINTS WHEN PERFORMING ON-SITE SERVICE

KONICA MINOLTA brand products are extensively tested before shipping, to ensure that all applicable safety standards are met, in order to protect the customer and customer engineer (hereafter called the CE) from the risk of injury. However, in daily use, any electrical equipment may be subject to parts wear and eventual failure. In order to maintain safety and reliability, the CE must perform regular safety checks.

1. Power Supply

Connection to Power Supply

⚠ WARNING

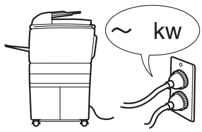
- Check that mains voltage is as specified.

  Connection to wrong voltage supply may result in fire or electric shock.

- Connect power plug directly into wall outlet having same configuration as the plug.

  Use of an adapter leads to the product connecting to inadequate power supply (voltage, current capacity, grounding), and may result in fire or electric shock.

  If proper wall outlet is not available, advice the customer to contact qualified electrician for the installation.



- Plug the power cord into the dedicated wall outlet with a capacity greater than the maximum power consumption.

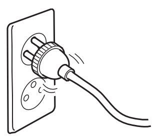
  If excessive current flows in the wall outlet, fire may result.

- If two or more power cords can be plugged into the wall outlet, the total load must not exceed the rating of the wall outlet.

  If excessive current flows in the wall outlet, fire may result.

- Make sure the power cord is plugged in the wall outlet securely.

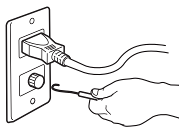
  Contact problems may lead to increased resistance, overheating, and the risk of fire.



- Check whether the product is grounded properly.

  If current leakage occurs in an ungrounded product, you may suffer electric shock while operating the product.

  Connect power plug to grounded wall outlet.

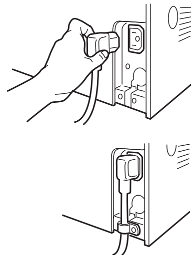


Power Plug and Cord

⚠ WARNING

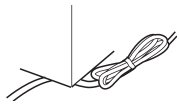
- When using the power cord set (inlet type) that came with this product, make sure the connector is securely inserted in the inlet of the product.
  When securing measure is provided, secure the cord with the fixture properly.

  If the power cord (inlet type) is not connected to the product securely, a contact problem may lead to increased resistance, overheating, and risk of fire.



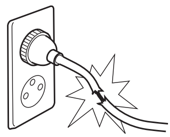
- Check whether the power cord is not stepped on or pinched by a table and so on.

  Overheating may occur there, leading to a risk of fire.



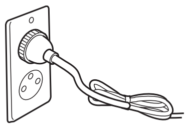
- Check whether the power cord is damaged. Check whether the sheath is damaged.

  If the power plug, cord, or sheath is damaged, replace with a new power cord (with plug and connector on each end) specified by KMBT. Using the damaged power cord may result in fire or electric shock.



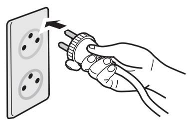
- Do not bundle or tie the power cord.

  Overheating may occur there, leading to a risk of fire.



- Check whether dust is collected around the power plug and wall outlet.

  Using the power plug and wall outlet without removing dust may result in fire.

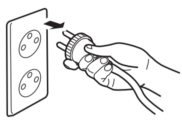


- Do not insert the power plug into the wall outlet with a wet hand.

  The risk of electric shock exists.

- When unplugging the power cord, grasp the plug, not the cable.

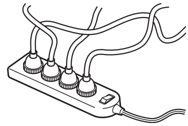
  The cable may be broken, leading to a risk of fire and electric shock.



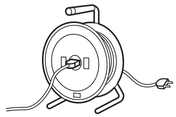
Wiring

⚠ WARNING

- Never use multi-plug adapters to plug multiple power cords in the same outlet.
  If used, the risk of fire exists.



- When an extension cord is required, use a specified one. Current that can flow in the extension cord is limited, so using a too long extension cord may result in fire.
  Do not use an extension cable reel with the cable taken up. Fire may result.

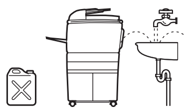


2. Installation Requirements

Prohibited Installation Places

⚠ WARNING

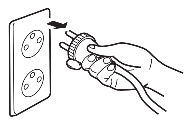
- Do not place the product near flammable materials or volatile materials that may catch fire.
  A risk of fire exists.
- Do not place the product in a place exposed to water such as rain.
  A risk of fire and electric shock exists.



When not Using the Product for a long time

⚠ WARNING

- When the product is not used over an extended period of time (holidays, etc.), switch it off and unplug the power cord.
  Dust collected around the power plug and outlet may cause fire.



Ventilation

⚠ CAUTION

- The product generates ozone gas during operation, but it will not be harmful to the human body.

  If a bad smell of ozone is present in the following cases, ventilate the room.

  a. When the product is used in a poorly ventilated room
  b. When taking a lot of copies
  c. When using multiple products at the same time



Stability

⚠ CAUTION

- Be sure to lock the caster stoppers.

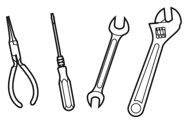
  In the case of an earthquake and so on, the product may slide, leading to a injury.

Inspection before Servicing

⚠ CAUTION

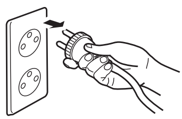
- Before conducting an inspection, read all relevant documentation (service manual, technical notices, etc.) and proceed with the inspection following the prescribed procedure in safety clothes, using only the prescribed tools. Do not make any adjustment not described in the documentation.

  If the prescribed procedure or tool is not used, the product may break and a risk of injury or fire exists.



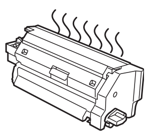
- Before conducting an inspection, be sure to disconnect the power plugs from the product and options.

  When the power plug is inserted in the wall outlet, some units are still powered even if the POWER switch is turned OFF. A risk of electric shock exists.



- The area around the fixing unit is hot.

  You may get burnt.

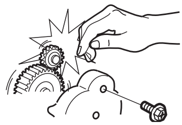


Work Performed with the Product Powered On

⚠ WARNING

- Take every care when making adjustments or performing an operation check with the product powered.

  If you make adjustments or perform an operation check with the external cover detached, you may touch live or high-voltage parts or you may be caught in moving gears or the timing belt, leading to a risk of injury.



- Take every care when servicing with the external cover detached.

  High-voltage exists around the drum unit. A risk of electric shock exists.

Safety Checkpoints

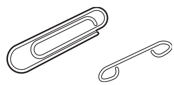
⚠ WARNING

- Check the exterior and frame for edges, burrs, and other damage.

  The user or CE may be injured.

- Do not allow any metal parts such as clips, staples, and screws to fall into the product.

  They can short internal circuits and cause electric shock or fire.



- Check wiring for squeezing and any other damage.

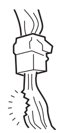
  Current can leak, leading to a risk of electric shock or fire.

- Carefully remove all toner remnants and dust from electrical parts and electrode units such as a charging corona unit.

  Current can leak, leading to a risk of product trouble or fire.

- Check high-voltage cables and sheaths for any damage.

  Current can leak, leading to a risk of electric shock or fire.



Safety Checkpoints

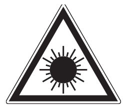
⚠ WARNING

- Check electrode units such as a charging corona unit for deterioration and sign of leakage.

  Current can leak, leading to a risk of trouble or fire.

- Before disassembling or adjusting the write unit (P/H unit) incorporating a laser, make sure that the power cord has been disconnected.

  The laser light can enter your eye, leading to a risk of loss of eyesight.

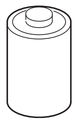


- Do not remove the cover of the write unit. Do not supply power with the write unit shifted from the specified mounting position.

  The laser light can enter your eye, leading to a risk of loss of eyesight.

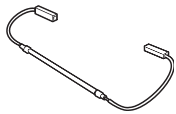
- When replacing a lithium battery, replace it with a new lithium battery specified in the Parts Guide Manual. Dispose of the used lithium battery using the method specified by local authority.

  Improper replacement can cause explosion.



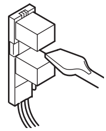
- After replacing a part to which AC voltage is applied (e.g., optical lamp and fixing lamp), be sure to check the installation state.

  A risk of fire exists.



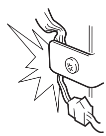
- Check the interlock switch and actuator for loosening and check whether the interlock functions properly.

  If the interlock does not function, you may receive an electric shock or be injured when you insert your hand in the product (e.g., for clearing paper jam).



- Make sure the wiring cannot come into contact with sharp edges, burrs, or other pointed parts.

  Current can leak, leading to a risk of electric shock or fire.

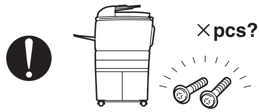


Safety Checkpoints

⚠ WARNING

- Make sure that all screws, components, wiring, connectors, etc. that were removed for safety check and maintenance have been reinstalled in the original location. (Pay special attention to forgotten connectors, pinched cables, forgotten screws, etc.)

  A risk of product trouble, electric shock, and fire exists.



Handling of Consumables

⚠ WARNING

- Toner and developer are not harmful substances, but care must be taken not to breathe excessive amounts or let the substances come into contact with eyes, etc. It may be stimulative.

  If the substances get in the eye, rinse with plenty of water immediately. When symptoms are noticeable, consult a physician.



- Never throw the used cartridge and toner into fire.

  You may be burned due to dust explosion.

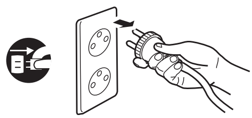


Handling of Service Materials

⚠ CAUTION

- Unplug the power cord from the wall outlet.

  Drum cleaner (isopropyl alcohol) and roller cleaner (acetone-based) are highly flammable and must be handled with care. A risk of fire exists.



- Do not replace the cover or turn the product ON before any solvent remnants on the cleaned parts have fully evaporated.

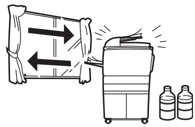
  A risk of fire exists.



Handling of Service Materials

⚠ CAUTION

- Use only a small amount of cleaner at a time and take care not to spill any liquid. If this happens, immediately wipe it off.
  A risk of fire exists.
- When using any solvent, ventilate the room well.
  Breathing large quantities of organic solvents can lead to discomfort.



[4] Used Batteries Precautions

ALL Areas

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Germany

VORSICHT!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.
Ersatz nur durch denselben oder einen vom Hersteller empfohlenen gleichwertigen Typ.
Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

France

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.
Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.
Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

Denmark

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

Finland, Sweden

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

Norway

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

[5] Laser Safety

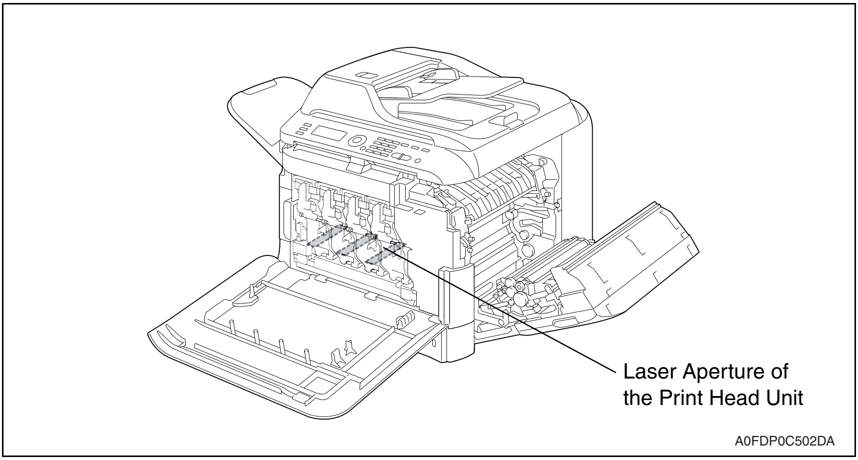
- This is a digital machine certified as a Class 1 laser product. There is no possibility of danger from a laser, provided the machine is serviced according to the instruction in this manual.

5.1 Internal Laser Radiation

semiconductor laser	
Maximum power of the laser diode	15 mW
Maximum average radiation power (*)	8.5 μW
Wavelength	770-800 nm

*at laser aperture of the Print Head Unit

- This product employs a Class 3B laser diode that emits an invisible laser beam. The laser diode and the scanning polygon mirror are incorporated in the print head unit.
- The print head unit is NOT A FIELD SERVICEABLE ITEM. Therefore, the print head unit should not be opened under any circumstances.



U.S.A., Canada
(CDRH Regulation)

- This machine is certified as a Class 1 Laser product under Radiation Performance Standard according to the Food, Drug and Cosmetic Act of 1990. Compliance is mandatory for Laser products marketed in the United States and is reported to the Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration of the U.S. Department of Health and Human Services (DHHS). This means that the device does not produce hazardous laser radiation.

- The label shown on page S-16 indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

CAUTION
- **Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.**

semiconductor laser	
Maximum power of the laser diode	15 mW
Wavelength	770-800 nm

All Areas

CAUTION
- **Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.**

semiconductor laser	
Maximum power of the laser diode	15 mW
Wavelength	770-800 nm

Denmark

ADVARSEL
- **Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling. Klasse 1 laser produkt der opfylder IEC60825-1 sikkerheds kravene.**

halvlederlaser	
Laserdiodens højeste styrke	15 mW
bølgelængden	770-800 nm

Finland, Sweden

LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT

VAROITUS!
- **Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.**

puolijohdelaser	
Laserdiodin suurin teho	15 mW
aallonpituus	770-800 nm

VARNING!
- **Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.**

halvledarlaser	
Den maximala effekten för laserdioden	15 mW
våglängden	770-800 nm

VARO!
- **Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättomälle lasersäteilylle. Älä katso säteeseen.**

VARNING!
- **Osynlig laserstråining när denna del är öppnad och spärren är urkopplad. Betrakta ej stråien.**

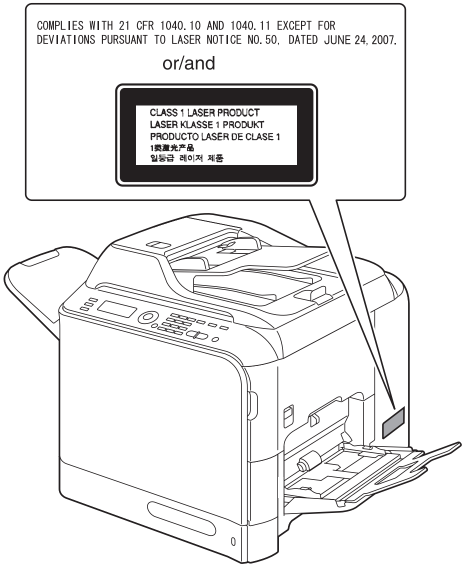
Norway

ADVERSEL
- **Dersom apparatet brukes på annen måte enn spesifisert i denne bruksanvisning, kan brukeren utsettes för unsynlig laserstrålning, som overskrider grensen for laser klass 1.**

halvleder laser	
Maksimal effekt till laserdiode	15 mW
bølgelengde	770-800 nm

5.2 Laser Safety Label

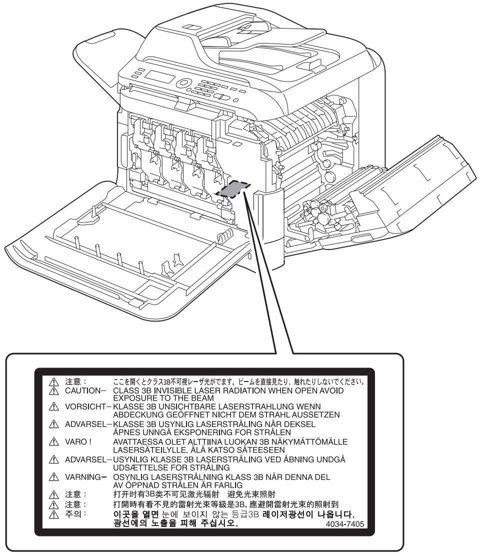
- A laser safety label is attached to the inside of the machine as shown below.



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5.3 Laser Caution Label

- A laser caution label is attached to the outside of the machine as shown below.



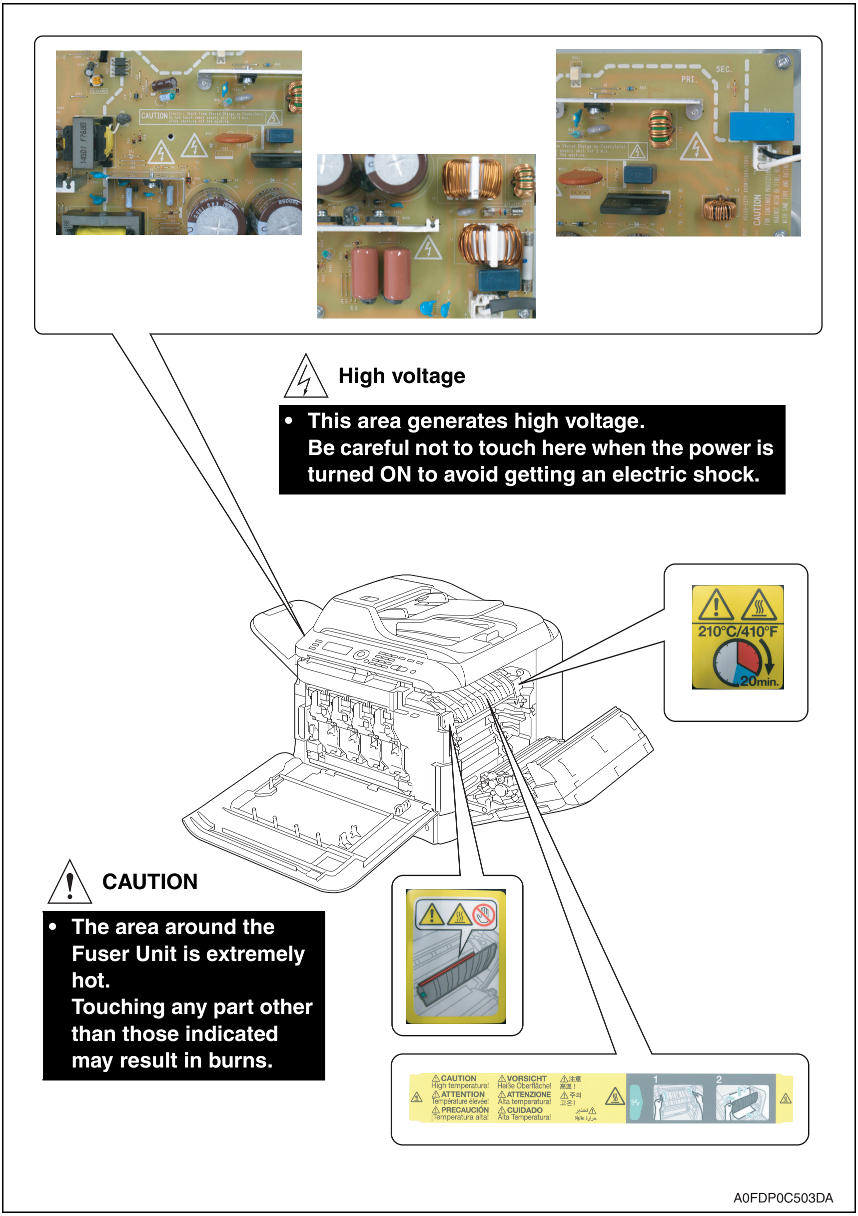
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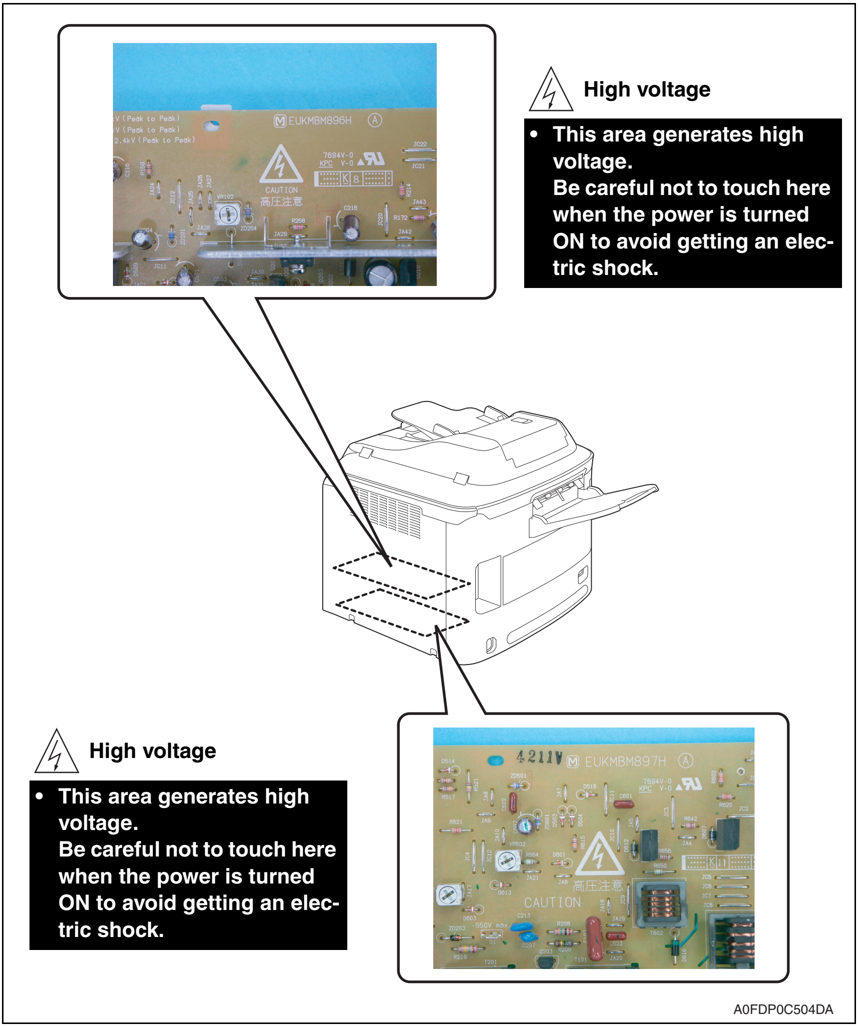
5.4 PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT

- When laser protective goggles are to be used, select ones with a lens conforming to the above specifications.
- When a disassembly job needs to be performed in the laser beam path, such as when working around the printerhead and PC Drum, be sure first to turn the printer OFF.
- If the job requires that the printer be left ON, take off your watch and ring and wear laser protective goggles.
- A highly reflective tool can be dangerous if it is brought into the laser beam path. Use utmost care when handling tools on the user's premises.
- The Print Head is not to be disassembled or adjusted in the field. Replace the Unit or Assembly including the Control Board. Therefore, remove the Laser Diode, and do not perform Control Board trimmer adjustment.

WARNING INDICATIONS ON THE MACHINE

Caution labels shown are attached in some areas on/in the machine.
When accessing these areas for maintenance, repair, or adjustment, special care should be taken to avoid burns and electric shock.





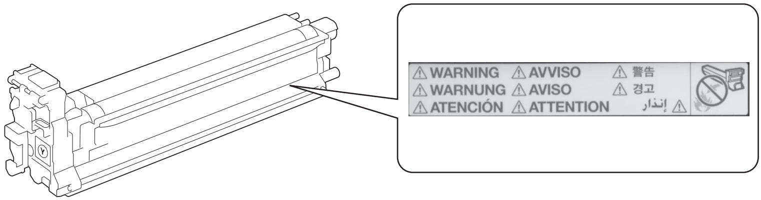
High voltage

- **This area generates high voltage.**
  Be careful not to touch here when the power is turned ON to avoid getting an electric shock.

High voltage

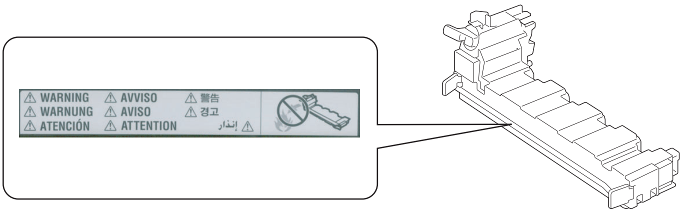
- **This area generates high voltage.**
  Be careful not to touch here when the power is turned ON to avoid getting an electric shock.

A0FDP0C504DA



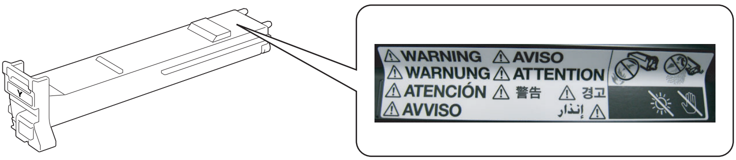
⚠ WARNING

- **Do not burn used Print Units.**
  Toner expelled from the fire is dangerous.



⚠ WARNING

- **Do not burn used Waste Toner Bottle.**
  Toner expelled from the fire is dangerous.



⚠ WARNING

- **Do not burn used Toner Cartridge.**
  Toner expelled from the fire is dangerous.

A00FP0C504DA

⚠ CAUTION:

- **You may be burned or injured if you touch any area that you are advised by any caution label to keep yourself away from. Do not remove caution labels. And also, when the caution label is peeled off or soiled and cannot be seen clearly, replace it with a new caution label.**

MEASURES TO TAKE IN CASE OF AN ACCIDENT

1. If an accident has occurred, the distributor who has been notified first must immediately take emergency measures to provide relief to affected persons and to prevent further damage.
2. If a report of a serious accident has been received from a customer, an on-site evaluation must be carried out quickly and KMBT must be notified.
3. To determine the cause of the accident, conditions and materials must be recorded through direct on-site checks, in accordance with instructions issued by KMBT.
4. For reports and measures concerning serious accidents, follow the regulations specified by every distributor.

Composition of the service manual

This service manual consists of Theory of Operation section and Field Service section to explain the main machine and its corresponding options.

Theory of Operation section gives, as information for the CE to get a full understanding of the product, a rough outline of the object and role of each function, the relationship between the electrical system and the mechanical system, and the timing of operation of each part.

Field Service section gives, as information required by the CE at the site (or at the customer's premise), a rough outline of the service schedule and its details, maintenance steps, the object and role of each adjustment, error codes and supplementary information.

The basic configuration of each section is as follows. However some options may not be applied to the following configuration.

<Theory of Operation section>

OUTLINE:	Explanation of system configuration, product specifications, unit configuration, and paper path
COMPOSITION/OPERATION:	Explanation of configuration of each unit, operating system, and control system

<Field service section>

OUTLINE:	Explanation of system configuration, and product specifications
MAINTENANCE:	Explanation of service schedule, maintenance steps, service tools, removal/reinstallation methods of major parts, and firmware version up method etc.
ADJUSTMENT/SETTING:	Explanation of utility mode, service mode, and mechanical adjustment etc.
TROUBLESHOOTING:	Explanation of lists of jam codes and error codes, and their countermeasures etc.
APPENDIX:	Parts layout drawings, connector layout drawings, timing chart, overall layout drawing are attached.

Notation of the service manual

A. Product name

In this manual, each of the products is described as follows:

(1)	bizhub C20	Main body
(2)	Microsoft Windows NT 4.0:	Windows NT 4.0 or Windows NT
	Microsoft Windows 2000:	Windows 2000
	Microsoft Windows XP:	Windows XP
	Microsoft Windows Vista:	Windows Vista

When the description is made in combination of the OS's mentioned above:

Windows NT 4.0/2000

Windows NT/2000/XP/Vista

B. Brand name

The company names and product names mentioned in this manual are the brand name or the registered trademark of each company.

C. Feeding direction

- When the long side of the paper is parallel with the feeding direction, it is called short edge feeding. The feeding direction which is perpendicular to the short edge feeding is called the long edge feeding.
- Short edge feeding will be identified with [S (abbreviation for Short edge feeding)] on the paper size. No specific notation is added for the long edge feeding.
  When the size has only the short edge feeding with no long edge feeding, [S] will not be added to the paper size.

<Sample notation>

Paper size	Feeding direction	Notation
A4	Long edge feeding	A4
	Short edge feeding	A4S
A3	Short edge feeding	A3

KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

bizhub C20

Main body

2008.09

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

Revision history

After publication of this service manual, the parts and mechanism may be subject to change for improvement of their performance.
Therefore, the descriptions given in this service manual may not coincide with the actual machine.

When any change has been made to the descriptions in the service manual, a revised version will be issued with a revision mark added as required.

Revision mark:
- To indicate clearly a section revised, △1 is shown at the left margin of the revised section.
  The number inside △1 represents the number of times the revision has been made.

- To indicate clearly a page that contains the revision, ▲1 is shown near the page number of the corresponding page.
  The number inside ▲1 represents the number of times the revision has been made.

NOTE

Revision marks shown in a page are restricted only to the latest ones with the old ones deleted.
- When a page revised in Ver. 2.0 has been changed in Ver. 3.0:
  The revision marks for Ver. 3.0 only are shown with those for Ver. 2.0 deleted.
- When a page revised in Ver. 2.0 has not been changed in Ver. 3.0:
  The revision marks for Ver. 2.0 are left as they are.

2008/09	1.0	—	Issue of the first edition
Date	Service manual Ver.	Revision mark	Descriptions of revision

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Troubleshooting

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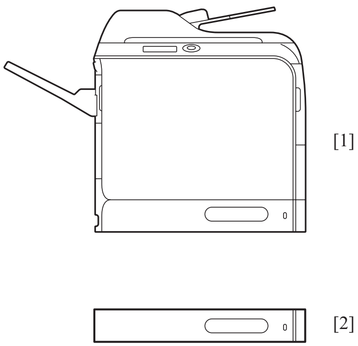
Appendix

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Outline

1. System configuration

Machine front view



[1]	bizhub C20	[2]	Lower feeder unit

2. Product specifications

A. Type

Type	Desktop tandem full-color A4 laser beam printer
Printing system	Semiconductor laser and electrostatic image transfer to plain paper
Exposure system	4 laser diode and 1 polygon mirror
PC drum type	OPC (organic photo conductor)
Photoconductor cleaning	Blade cleaning system
Scan resolution	600 x 600 dpi, 600 x 300 dpi
Print resolution	600 x 600 dpi x 4bit
Copy resolution	600 x 600 dpi, 1200 x 600 dpi
Platen	Stationary
Registration	Rear left edge
Paper feeding system	Tray1: 100 sheets Tray2: 250 sheets Tray3: 500 sheets (Option)
Developing system	Single-element developing system
Charging system	Needle charging system (with Ozone suction feature)
Image transfer system	Intermediate transfer belt system
Paper separating system	Curvature separation + charge-neutralizing system
Fusing system	Belt fusing
Paper exit system	Face down (Output tray capacity: 250 sheets)

B. Functions

Warm-up time	Cold start: 58 seconds Sleep-mode to ready: 40 seconds (Power on to ready, at ambient temperature of 23 °C/73.4 °F and rated source voltage)
Process speed	144 mm/sec (plain paper, Monochrome/full color mode) 72 mm/sec (thick paper/OHP, Monochrome/full color mode)
First-page-out-time	18.0 second (Full-color mode, A4S/LetterS, 1-sided mode, plain paper)
Print speed	24 pages/min. (A4S, 1-sided print, plain paper) 25 pages/min. (LetterS, 1-sided print, plain paper) 12 pages/min. (A4S, 1-sided print, thick paper) 12.5 pages/min. (LetterS, 1-sided print, thick paper)

C. Media

Type		Paper source (maximum tray capacity)	
		Tray 1	Tray 2
Media type	Plain paper (60 to 90 g/m²; 16 to 24 lb)	100 sheets	250 sheets
	Thick 1 (91 to 150 g/m²)	20 sheets	—
	Thick 2 (151 to 210 g/m²)		
	OHP		
	Label		
	Letterhead		
	Transparencies		
	Glossy 1 (100 to 128 g/m²)		
	Glossy 2 (129 to 158 g/m²)		
	Postcard		
	Envelope	10 sheets	
Media dimensions	Width	92 to 216 mm (3.6 to 8.5 inch)	92 to 216 mm (3.6 to 8.5 inch)
	Length	148 to 356 mm (5.8 to 14.0 inch)	148 to 297 mm (5.8 to 11.7 inch)

D. Maintenance

E. Machine specifications

Power requirements	Voltage:	AC 100V, 120 V, 220 to 240 V
	Frequency:	50 to 60 Hz ± 3 Hz
Max power consumption		1,250 W or less 25 W less (Energy saver mode)
Dimensions		539 (W) x 590 (D) x 578 (H) mm 21.23 (W) x 23.23 (D) x 22.75 (H) inch
Weight		50.0 kg (110.3 lb) or less without consumables 55.0 kg (121.3 lb) or less with consumables
Operating noise		During standby : 39 dB (A) or less During printing : 53.5 dB (A) or less During copying : 54.5 dB (A) or less (with ADF)

F. Operating environment

Temperature	10 °C to 35 °C / 50 °F to 95 °F (with a fluctuation of 10 °C / 18 °F or less per hour)
Humidity	15% to 85% (with a fluctuation of 20% or less per hour)

G. Print functions

Type	Built-in type controller
Personal computer	Pentium II: 400 MHz or higher
	PowerPC G3 or later (G4 or later is recommended)
	Macintosh equipped with an Intel processor
Operating system	Microsoft Windows Vista Home Basic/Home Premium/Ultimate/Business/ Enterprise, Windows Vista Home Basic /Home Premium /Ultimate/Business / Enterprise x64 Edition, Windows XP Home Edition/Professional (Service Pack 2 or later), Windows XP Professional x64 Edition, Windows Server 2003, Windows Server 2003 x64 Edition, Windows 2000 (Service Pack 4 or later)
	Mac OS X (10.2.8 or later; We recommend installing the newest patch)
	Red Hat Linux 9.0, SuSE Linux 8.2
Standard memory	Printer: 256 MB, Copier: 256MB
I/O Interfaces	10Base-T/100Base-TX/1000Base-T Ethernet interface port
	USB (PictBride1.0, USB Device Printing) RJ-45 connector

NOTE

- **These specifications are subject to change without notice.**

2.1 Fax specifications

Resolution	Standard (203 dpi x 98 dpi)	
	Fine (203 dpi x 196 dpi)	
	Super fine (203 dpi x 392 dpi)	
Halftone level	Standard/Fine/Super fine Halftone standard/Halftone fine/Halftone super fine	
Automatic reduction	Receive	Supported
	Transmit	Supported
Compatibility	ECM/Super G3	
Modem speed	V.34 (up to 33.6 Kbps)	
Transmit speed	3 second/page (at V.34)	
Compression	MH/MR/MMR/JBIG	
Memory for receiving	6 MB for Fax-RX (approx. 250 pages), (included in 32 MB NAND flash)	
Remote setting	Available via Tel line and USB	
Paper size	A4S, LegalS, LetterS	
Paper type	Plain paper, recycled paper	
Functions	Speed dial	220
	Group dial	20 groups (50 destination stations for one group)
	Broadcast	Available maximum 255 stations. (Speed dial 220 stations, full dial 16 stations)
	Other supported functions	Timer transmission, address book, real time clock, auto redial, reduce/split, smoothing

Maintenance

3. Periodical check

3.1 Maintenance items

3.1.1 Parts to be replaced by users (CRU)

No	Class	Part to be replaced	Number of prints	Clean	Replace	Description
1	Processing section	Standard in-box toner cartridge (C, M, Y, K)	8,000 (Continuous printing)		●	
2	Processing section	High-capacity toner cartridge (C, M, Y, K)	8,000 (Continuous printing)		●	
3	Processing section	Imaging unit (C, M, Y, K)	30,000 (Continuous printing)		●	
4	Processing section	Ozone filter *4	120,000		●	
5	Tray 2 media feed section	Feed roller	When malfunction occurs	●		
6	Tray 1 media feed section	Feed roller	When malfunction occurs	●		
7	Image transfer section	Transfer belt unit	120,000 (Continuous printing, 2P/J *1)		●	
8	Image transfer section	Transfer roller *4	120,000 (Continuous printing, 2P/J *1)		●	
9	Image transfer section	Waste toner bottle	36,000 (K *2) 9,000 (Y,M,C,K *3)		●	
10	Fusing section	Fuser unit	120,000 (Continuous printing) 100,000 (2P/J *1)		●	

*1 : 2 pages/job
*2 : When printed in black only
*3 : When printed in color only
*4 : The transfer roller and ozone filter are available as a kit and must be replaced at the same time

3.1.2 Parts to be replaced by a service engineer (FRU)

No	Class	Part to be replaced	Number of prints	Clean	Replace	Description
1	Tray 2 media feed section	Feed roller	300,000		●	
2	Tray 1 media feed section	Feed roller	300,000		●	
3	Lower feeder unit	Feed roller	300,000		●	

3.2 Maintenance parts

- To ensure that the machine produces good prints and to extend its service life, it is recommended that the maintenance jobs described in this schedule be carried out as instructed.
- The replacing time is to be determined by the total counter value.
- Maintenance conditions are based on A4S or letterS,1-side print.

3.2.1 Replacement parts

A. Main body

No	Class	Maintenance parts	Quan tity	Actual durable cycle	Parts No.	Descrip-tion	Ref.page
1	Tray 2	Feed roller	1	300,000	4138 3032 ##		P.8
2	Tray 1	Feed roller	1	300,000	4138 3032 ##		P.9

B. Option

No	Class	Maintenance parts	Quan tity	Actual durable cycle	Parts No.	Descrip-tions	Ref.page
1	Lower feeder unit	Feed roller	1	300,000	4128 3214 ##		*1

*1: For details, see the optional lower feeder unit service manual.

3.3 Concept of parts life

<table>
<tr><th></th><th>Description</th><th>Life value</th></tr>
<tr><td rowspan="2">Waste toner bottle</td><td rowspan="2">• Detected by the waste toner full sensor.
• A waste toner full condition is detected when about 1,500 color printed pages are produced after a waste toner near full condition has been detected.</td><td>Monochrome: 36,000 prints</td></tr>
<tr><td>Color: 9,000 prints</td></tr>
<tr><td rowspan="2">Fuser unit</td><td rowspan="2">• Based on the fusing motor rotation data, the fuser unit driving time is counted.
Comparing the fuser unit driving time count value with the number of pages printed, the machine detects the one that reaches its life value earlier.</td><td>120,000 prints (Continuous printing)</td></tr>
<tr><td>100,000 prints (2P/J)</td></tr>
<tr><td>Ozone filter</td><td>—</td><td>120,000 prints</td></tr>
<tr><td>Transfer roller</td><td>• Based on the number of pages printed, the life is detected.</td><td>120,000 prints</td></tr>
<tr><td>Transfer belt</td><td>• Base on the intermediate transport motor rotation data, the transfer belt driving time is counted and the life is detected.</td><td>120,000 prints</td></tr>
<tr><td rowspan="2">Imaging unit</td><td rowspan="2">• Base on the color PC drum motor or intermediate transport motor rotation data, the imaging unit driving time is counted.
Comparing the imaging unit driving time count value and the number of pages printed, the machine detects the one that reaches its life value earlier.</td><td>30,000 prints (Continuous printing)</td></tr>
<tr><td>20,000 prints (2P/J)</td></tr>
</table>

A. Conditions for life specifications values

- The life specification values represent the number of pages printed or figures equivalent to it when the given conditions (see the table given below) are met. They may be more or less, depending on the machine operating conditions of each individual user.

Item	Description
Job type	2 consecutive pages (2 pages/job)
Media size	A4S or LetterS
Color ratio	Black to Color = 6 : 4
Original density	C/W ratio = 5% each color

3.4 Maintenance Procedure (periodical check parts)

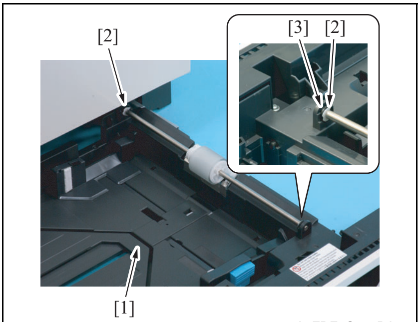
3.4.1 Replacing the tray 2 feed roller

A. Periodically replaced parts/cycle

- Tray 2 feed roller: Every 300,000 prints

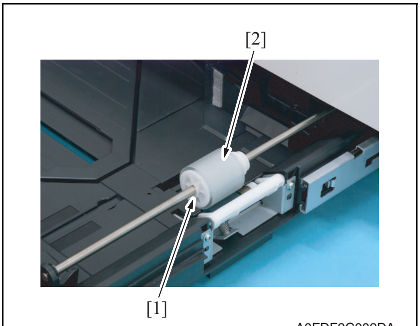
B. Procedure

1. Slide out the tray 2.



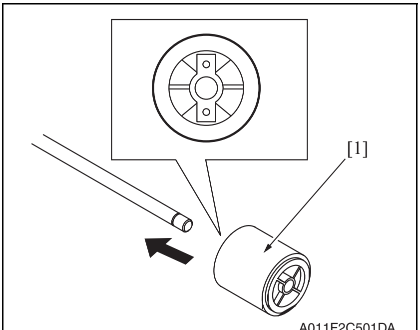
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2. Lock the media lift plate [1].
3. Remove two C-rings [2], and remove the bearing [3] at the front.



A0FDF2C002DA

4. Remove the C-ring [1], and remove the feed roller [2].



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NOTE

- **When reinstalling the feed roller [1], make sure that it is mounted in the direction shown in the illustration on the left.**

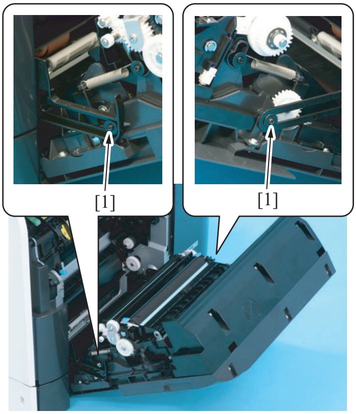
3.4.2 Replacing the tray 1 feed roller

A. Periodically replaced parts/cycle

- Tray 1 feed roller: Every 300,000 prints

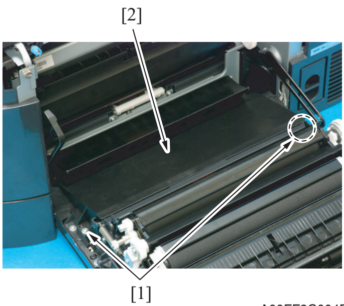
B. Procedure

1. Open the right door.



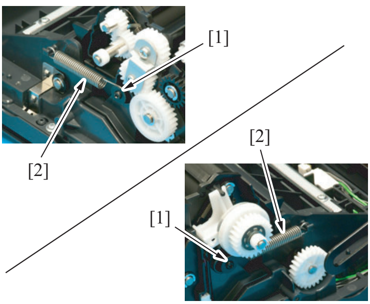
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2. Remove two screws [1].



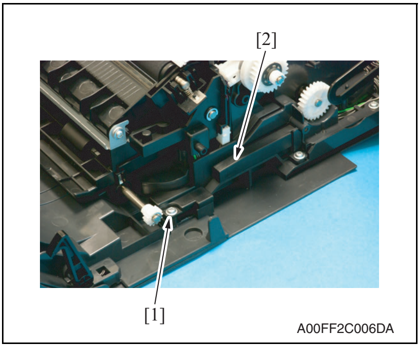
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3. Remove two screws [1], and remove the cover [2].

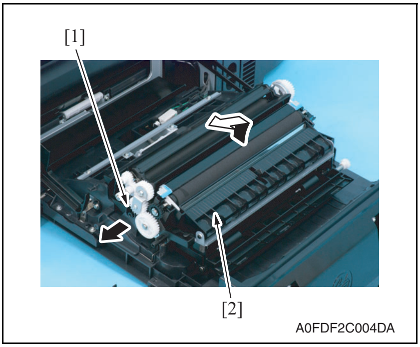


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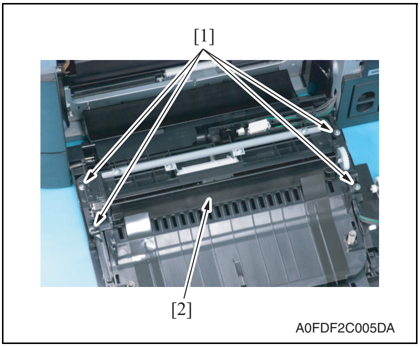
4. Remove two screws [1], and remove two springs [2].



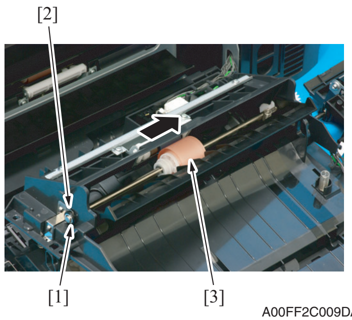
5. Remove the screw [1], and remove the cover [2].



6. Pull the hook part [1] in the direction of the arrow and remove it.
Remove the transport unit [2].

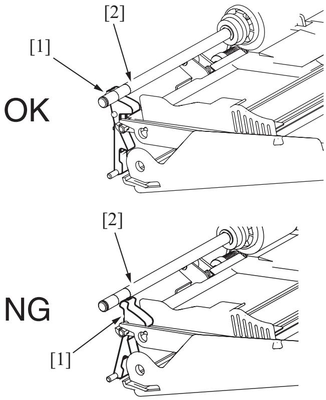


7. Remove four screws [1], and remove the tray 1 feed roller unit [2].



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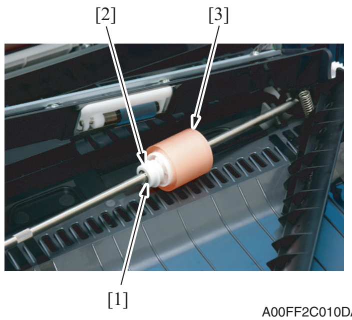
8. Remove the E-ring [1] and remove the bearing [2]. Then, slide the tray 1 feed roller assy [3] in the direction of the arrow shown.



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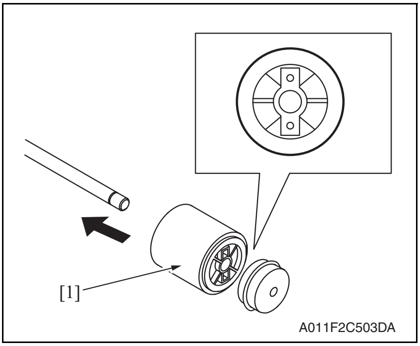
NOTE

- **When reinstalling the tray 1 feed roller assy, make sure that the shaft [2] sits on the front side of the stopper [1] as shown in the illustration.**



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9. Remove the E-ring [1], and remove the clutch [2] and the feed roller [3].

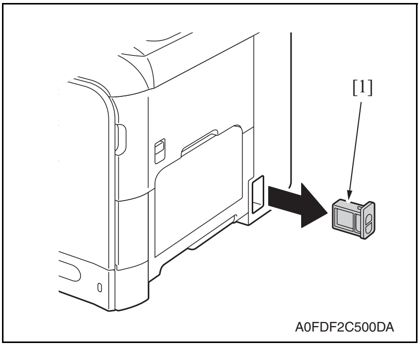


NOTE
- **When reinstalling the feed roller [1] and the clutch, make sure that it is mounted in the direction shown in the illustration on the left.**

3.4.3 Replacing the ozone filter

A. Periodically replaced parts/cycle
- Ozone filter: Every 120,000 prints

B. Procedure



1. Hold onto the handle of the ozone filter [1] and slide it out of the machine.
2. Install a new ozone filter in the machine.
3. Replace the transfer roller.
   See P.21

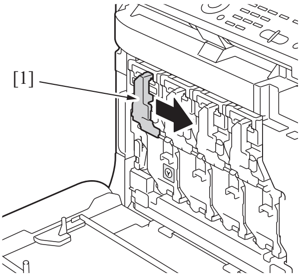
3.4.4 Replacing the toner cartridge (C/M/Y/K)

A. Periodically replaced parts/cycle

- Toner cartridge furnished with the machine (C, M, Y, K): Every 8,000 prints
- High-capacity toner cartridge (C, M, Y, K): Every 8,000 prints

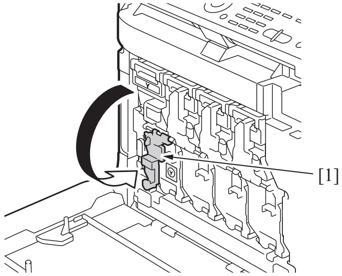
B. Removal procedure

1. Open the front cover.
2. Slide the lock lever [1] to the right.



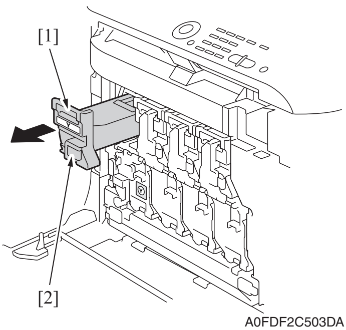
A0FDF2C501DA

3. Pull down the lock lever to unlock the toner cartridge.



A0FDF2C502DA

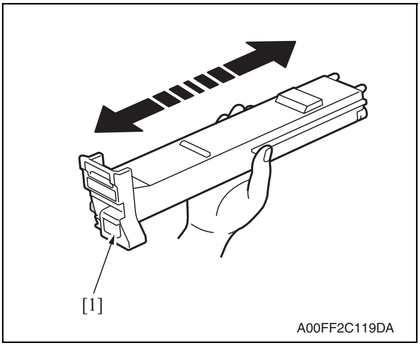
4. Grasp the toner cartridge handle [1] and pull the toner cartridge [2] out.



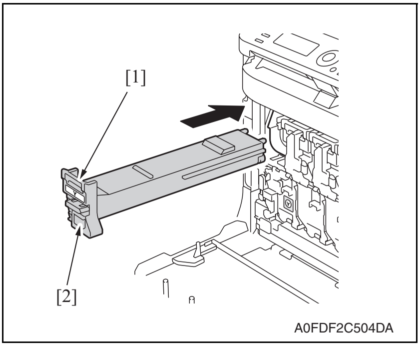
A0FDF2C503DA

C. Reinstallation procedure

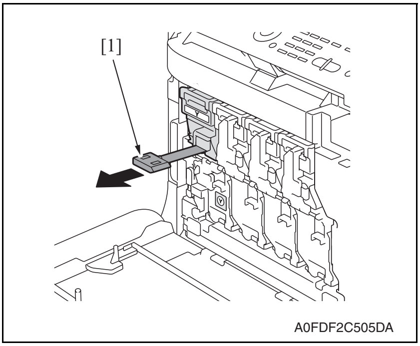
1. Take the toner cartridge out of its plastic bag.



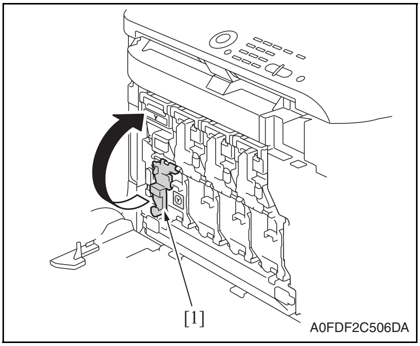
2. Gently shake the toner cartridge [1] three times to agitate the toner.



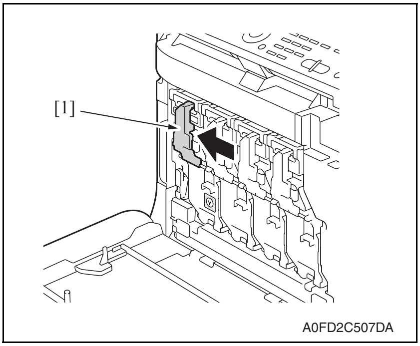
3. Grasp the toner cartridge handle [1] and slide the toner cartridge [2] in.



4. Remove the protective sheet by pulling it.



5. Raise the lock lever [1].



6. Slide the lock lever [1] to the left to lock the toner cartridge.

7. Close the front cover.

NOTE

- **When removing or reinstalling the toner cartridge while it is being used or after it has been used up, do not hold it or place it upside down, as spilled toner could result.**

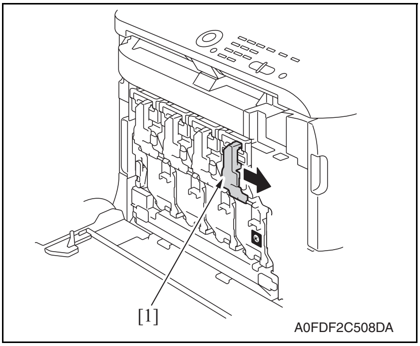
3.4.5 Replacing the imaging unit (C,M,Y,K)

A. Periodically replaced parts/cycle

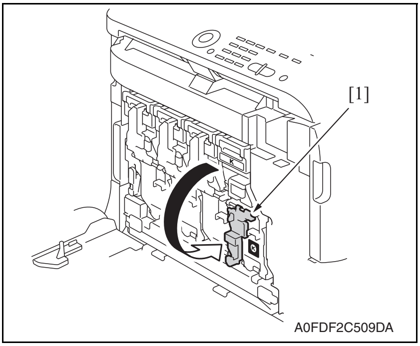
- Imaging unit: Every 3,000 prints

B. Removal procedure

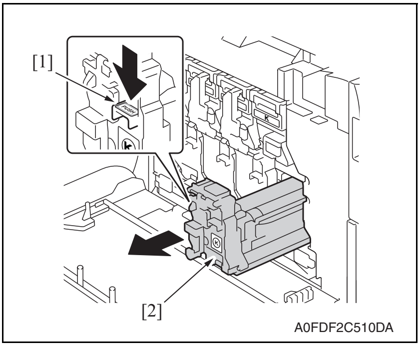
1. Open the front cover.



2. Slide the lock lever [1] to the right.

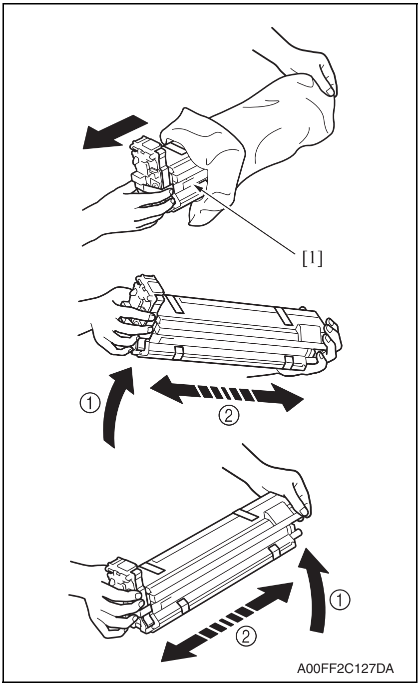


3. Pull down the lock lever [1] to unlock the imaging unit.

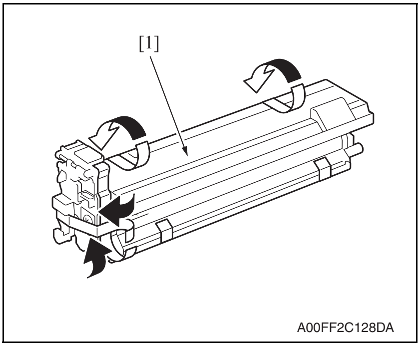


4. Press down the “Push” marked place [1].
5. Pull the imaging unit [2] out.

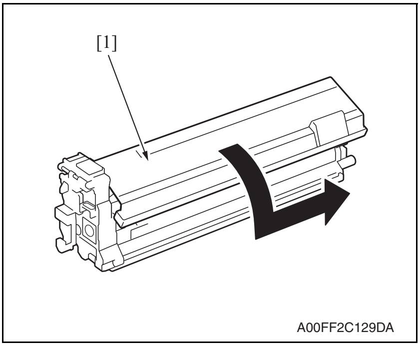
C. Reinstallation procedure



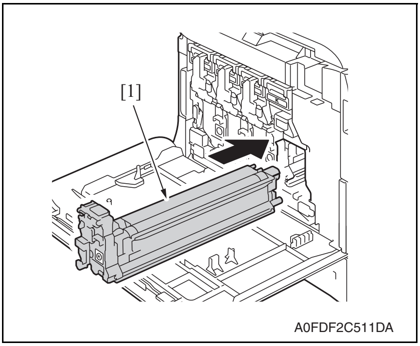
1. After removing the plastic bag, hold the imaging unit [1] with your hands and shake it two times as shown in the left illustration.



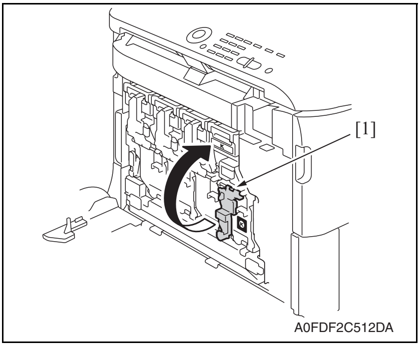
2. Take the imaging unit [1] out of the plastic bag and remove the shipping tape.



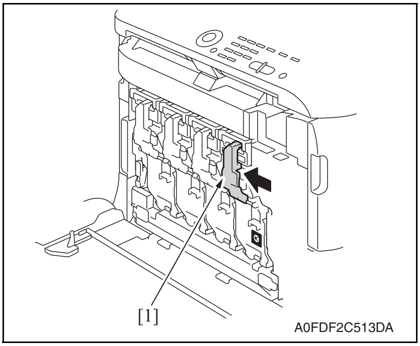
3. Remove the protective cover [1].



4. Slide the imaging unit [1] in.

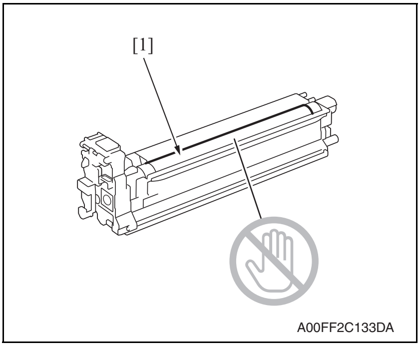


5. Raise the lock lever [1].



6. Slide the lock lever [1] to the left to lock the imaging unit.

7. Close the front cover.



NOTE

- **When installing and removing the imaging unit, take care not to touch the surface of the PC drum [1].**

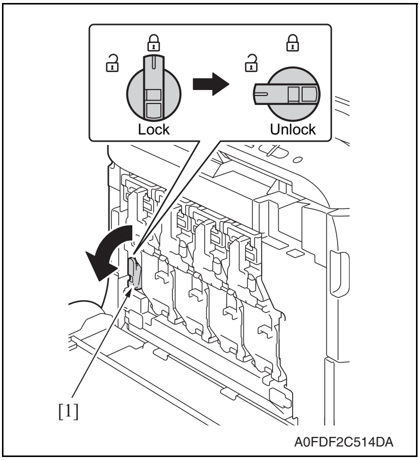
3.4.6 Replacing the waste toner bottle

A. Periodically replaced parts/cycle

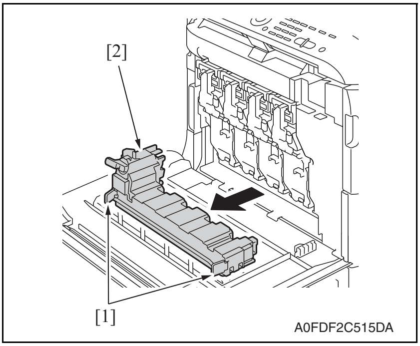
- Waste toner bottle: Every 36,000 prints (when printed in black only) / 9,000 prints (when printed in color only)

B. Removal procedure

1. Open the front cover.



2. Turn the lever [1] to unlock the waste toner bottle.



3. Holding the left and right handles [1], remove the waste toner bottle [2].
4. To reinstall, reverse the order of removal.

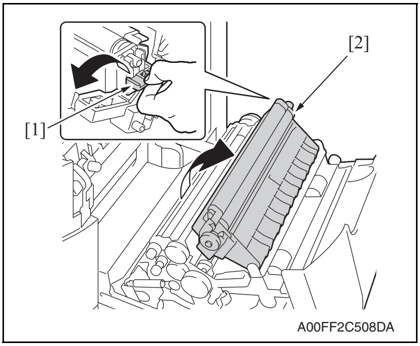
3.4.7 Replacing the transfer roller

A. Periodically replaced parts/cycle

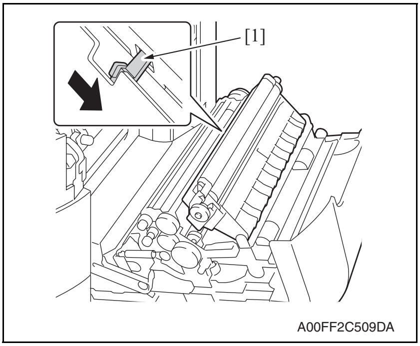
- Transfer roller: Every 120,000 prints

B. Removal procedure

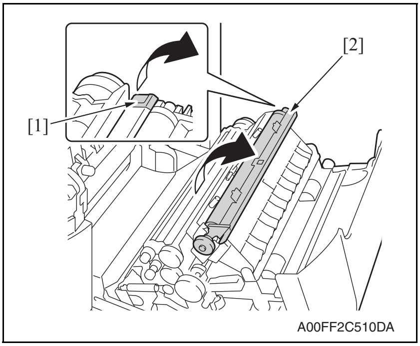
1. Open the right door.



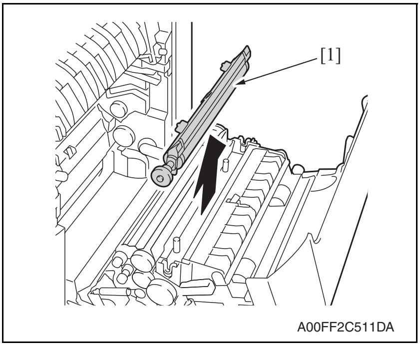
2. Hold onto the tab [1] and raise the transfer roller assy [2] in the direction shown by the arrow.



3. Unlock the lock lever [1].

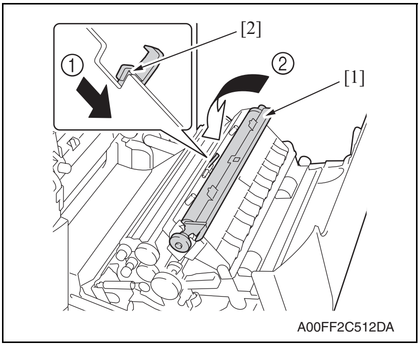


4. Hold onto the tab and raise the transfer roller [2] in the direction shown by the arrow.



5. Remove the transfer roller [1].

6. To reinstall, reverse the order of removal.



NOTE
- **When reinstalling the transfer roller [1], do that while unlocking the lock lever [2] as shown on the left.**

7. Replacing the ozone filter.
   See P.12
8. From the Menu, select [MAINTENANCE MENU] → [SUPPLIES REPLACE] → [TRANSFER ROLLER] and execute this function to reset the transfer roller counter value.
   For details, see “Adjustment/Setting.”
9. From the Menu, select [MAINTENANCE MENU] → [AIDC MODE] and execute this function.
   For details, see “Adjustment/Setting.”

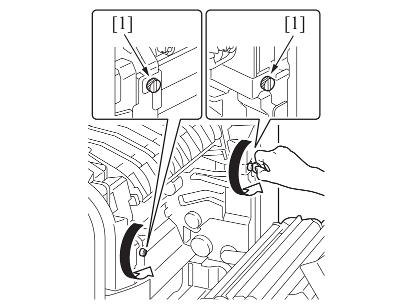
3.4.8 Replacing the transfer belt

A. Periodically replaced parts/cycle

- Transfer belt: Every 120,000 prints

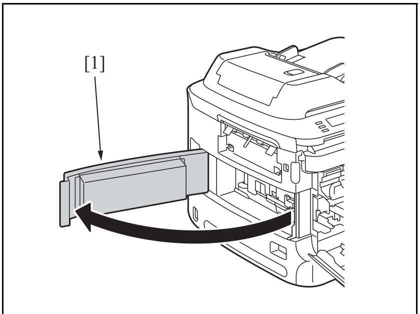
B. Removal procedure

1. Turn OFF the power switch.
2. Open the front cover.
3. Remove the waste toner bottle.
   See P.20
4. Remove the imaging unit (C, M, Y, K).
   See P.16
5. Remove the left cover.
   See P.61
6. Open the right door.



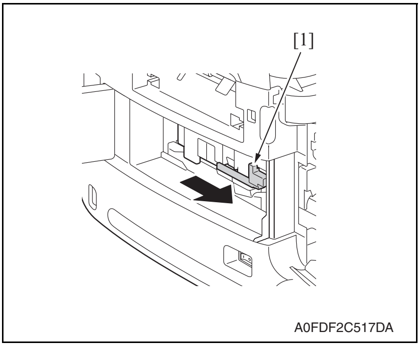
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7. Loosen two screws [1], and unlock the transfer belt.

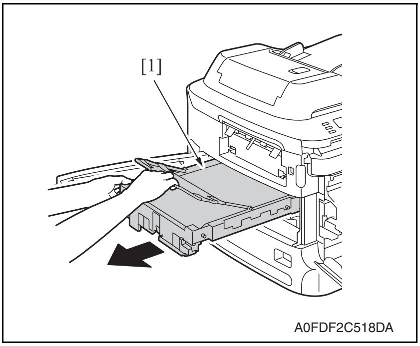


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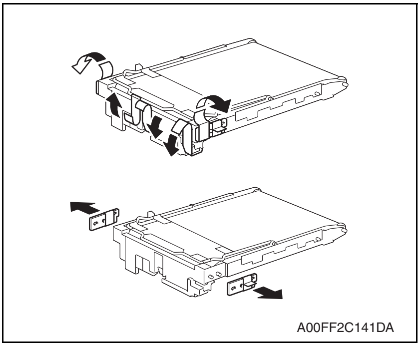
8. Open the left side cover [1].



9. Slide the shutter lever [1] to the front.



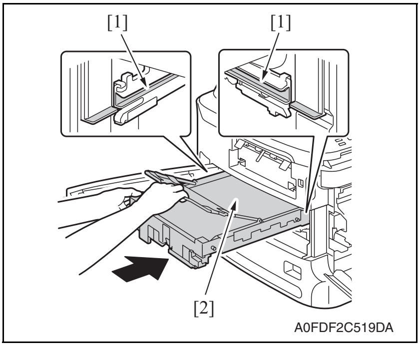
10. Grasp the transfer belt [1] handle and pull the transfer belt [1] out.



11. Remove the packing materials from the new transfer belt.

NOTE

- **Use care not to touch the belt of the transfer belt.**



12. Insert the transfer belt [2] along the rails [1].

NOTE

- **When inserting the unit, use care not to allow the docking gear to hit against the rail or other mechanism to prevent damage.**

13. To reinstall, reverse the order of removal.

14. From the Menu, select [MAINTENANCE MENU] → [SUPPLIES REPLACE] → [TRANSFER BELT] and execute this function to reset the transfer belt counter value.
For details, see “Adjustment/Setting.”

15. From the Menu, select [MAINTENANCE MENU] → [AIDC MODE] and execute this function.
For details, see “Adjustment/Setting.”

3.4.9 Replacing the fuser unit

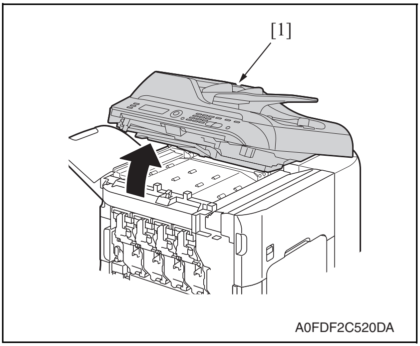
⚠ CAUTION
• **The temperature gets high in the vicinity of the fuser unit. You may get burned when you come into contact with the area. Before replacement operations, make sure that more than 20 minutes have elapsed since the main and sub power switches were turned off.**

A. Periodically replacing parts/cycle

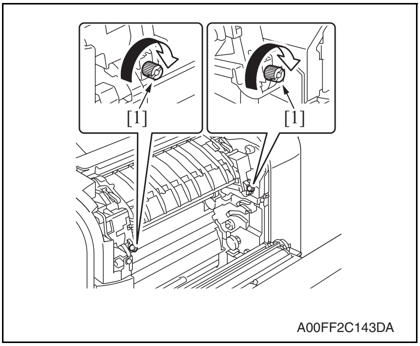
- Fuser unit: Every 120,000 prints (continuous printing) / Every 100,000 prints (2P/J)

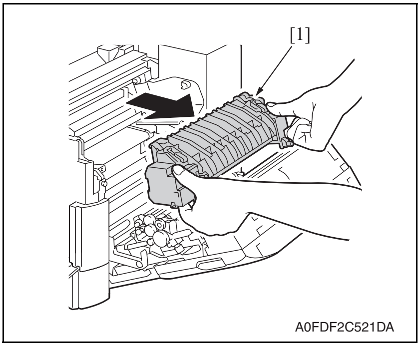
B. Procedure

1. Turn OFF the power switch, unplug the power cord from the power outlet, and let the machine to stand idle for about 20 min.
2. Open the front cover.
3. Open the scanner unit [1].



4. Open the right door.
5. Using a coin, remove the two screws [1] on the left side.



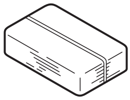


6. Remove the fuser unit [1].

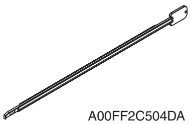
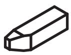
7. Install the new fuser unit.
8. From the Menu, select [MAINTENANCE MENU] → [SUPPLIES REPLACE] → [FUSER UNIT] and execute this function to reset the fuser unit counter value.
   For details, see “Adjustment/Setting.”

4. Service tool

4.1 Service material list

Tool name	Shape	Material No.	Remarks
Cleaning pad	 A02EF2C526DA	000V-18-1	10pcs/1pack
Isopropyl alcohol	 A00KF2C506DA	—	

4.2 CE tool list

Tool name	Shape	Quantity	Parts No.
Laser lens cleaning tool	 A00FF2C504DA	1	A011 1901 ##
Laser lens cleaning tool pad	 A00FF2C505DA	1	4138 2018 ##

5. Remote Setup Utility

5.1 About RSU

- RSU software (Remote Setup Utility) provides utility setting and also service setting with ease through the intermediary of PC.
- The PC is connected to user machine via the phone line or standard USB interface port.
- Using the RSU software allows checking the user machine conditions from a distance place.

5.2 Outline

5.2.1 Corresponding OS

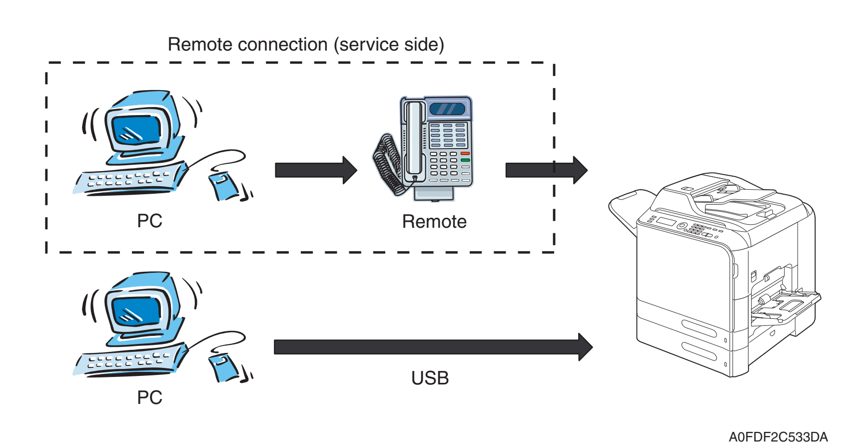
- Windows 2000, Windows XP, Windows Server 2003, Windows Vista.

5.2.2 PC environments

- Modem built-in PC or the PC on which external modem is connected where communication is possible using modem.

5.3 Connection methods

- The connection methods include the following two ones:



5.3.1 Remote connection (Phone line connection)

- Connecting to the phone line where the PC is connected to user machine via the modem and switching device allows user machine conditions to be checked from a distant place.

NOTE

- **When the phone line connection is to be made, set [ADMIN. MANAGEMENT] - [REMOTE MONITOR] to [ON].**
  See P.136
- **RSU does not allow FAX communication. It should be notified to the user that FAX transmission, and the operation and setting of other user machines are not allowed during use of RSU.**
- **You should not carry out local connection through other ports during remote connection with the PC, which is being currently used.**

5.3.2 Local connection (USB connection)

- Local connection allows the user machine conditions to be checked through connecting to the user machine directly via the USB port.

NOTE
- **You should install the TWAIN driver before performing local connection.**

5.4 Setup

5.4.1 Setup of PC

(1) Installing the RSU software

- You should download the RSU software beforehand into the computer where RSU is running.

1. Open the RSU software folder, which was downloaded before.
2. Double-click [RSU V0xx.exe].

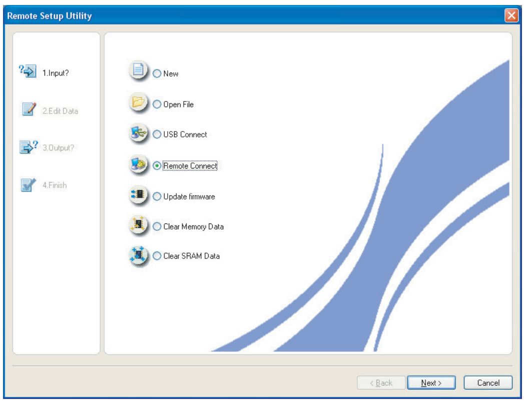


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5.4.2 Connection and access of user machine

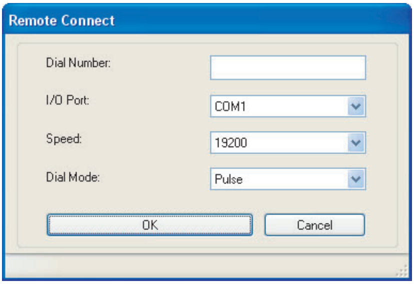
(1) Connection through phone line (remote connection)

1. Verify that user machine can run fax communication (communication standby status)
2. Connect the PC modem with the phone line.
3. Boot the RSU software in PC.
4. Select the [Remote Connect] from the menu.
5. Click [Next].



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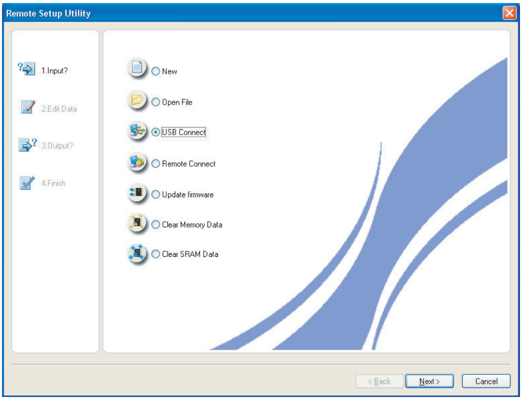
6. Enter the telephone number of the destination party.
7. Click [OK].



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(2) Local connect (USB connect)

1. You should install TWAIN driver beforehand.
2. Connect the PC with user machine.
3. Boot the RSU software in PC.
4. Select the [USB Connect] from the menu.
5. Click [Next].



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6. The message [ADMINISTERED BY PC PLEASE WAIT!] appears on the machine screen.



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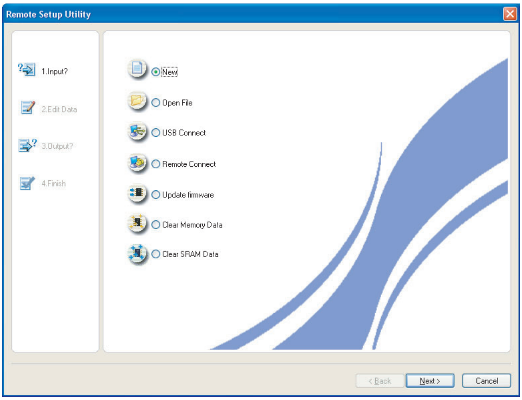
5.5 Operation

5.5.1 Job list

Setting	Description	Refer
New	Create a new dial setting.	P.32
Open File	Read the setting information previously saved.	P.35
USB Connect	Connect machine by USB.	P.30
Remote Connect	Connect machine by Remote.	
Update Firmware	Update firmware to machine.	P.36
Clear Memory Data	Clear all the contents of a memory.	P.37
Clear SRAM Data	Clear all image memory.	P.38

5.5.2 New (Dial setting)

1. Select the [New] from the menu.
2. Click [Next].



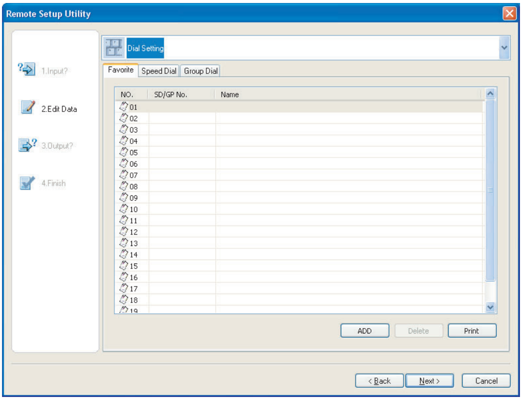
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(1) Favorite

NOTE

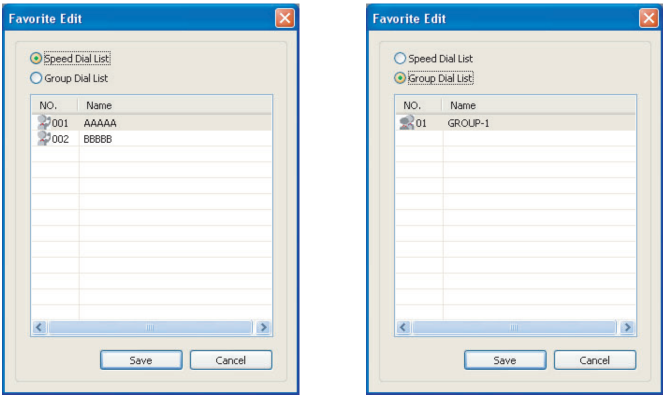
- **Before registering destinations in the favorite list, register them as [Speed Dial] or [Group Dial] destinations.**

1. Select the [Favorite] tab and double-click the “Favorite list” to be set.



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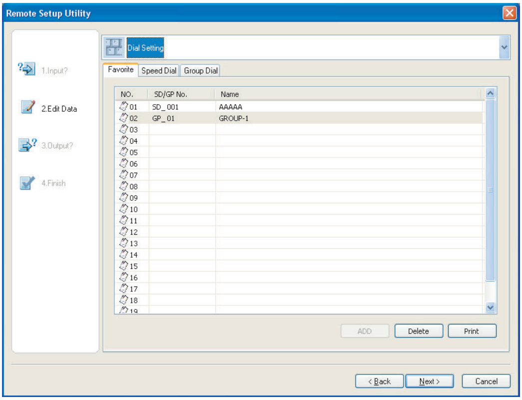
2. Select either “Speed Dial List” or “Group Dial List” and click [Save].



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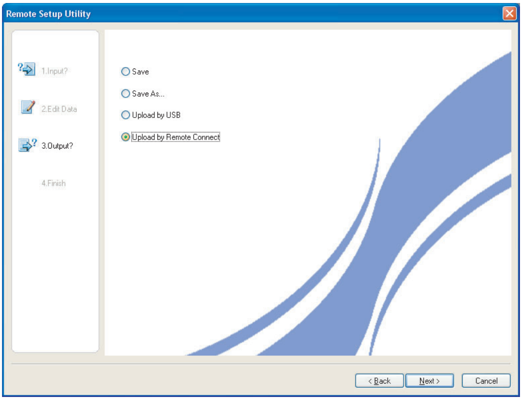
- To delete a Favorite list
  Select the “Favorite list” to be deleted and click [Delete].
- To print a Favorite list
  Click [Print].

3. Click [Next].



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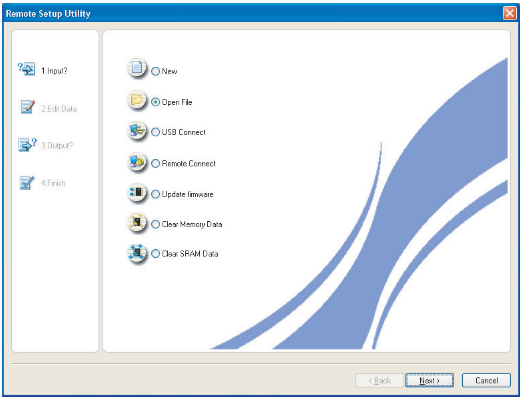
4. Select [Upload by USB] or [Upload by Remote Connect] according to the connection with the user machine.
5. Click [Next].



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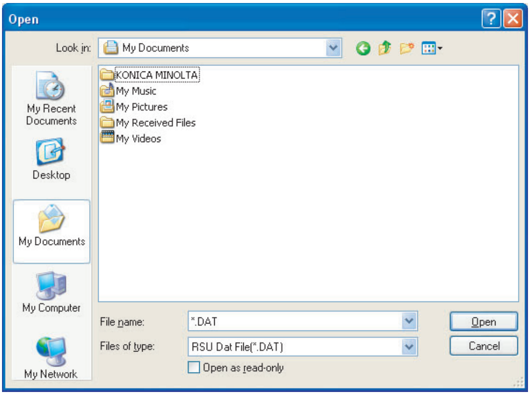
5.5.3 Open File

1. Select the [Open File] from the menu.
2. Click [Next].



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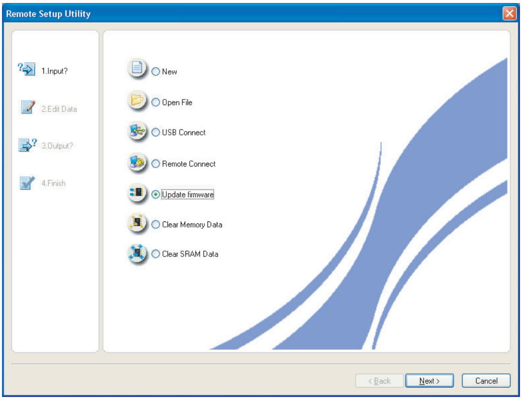
3. Select open KONICA MINOLTA bizhub C20 RSU format file (*.DAT).



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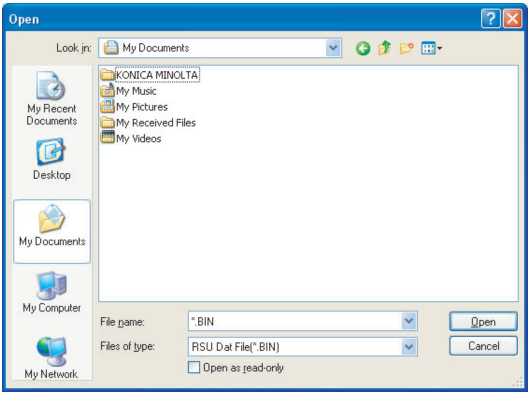
5.5.4 Update Firmware

1. Select the [Update Firmware] from the menu.
2. Click [Next].



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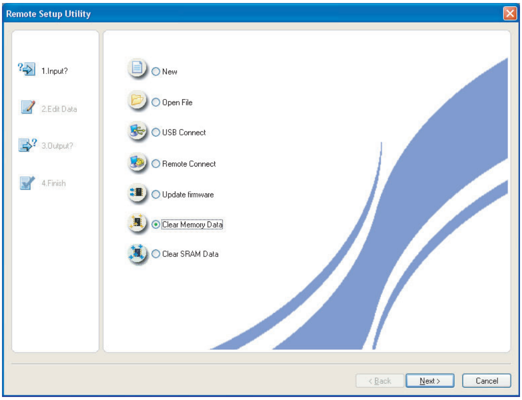
3. Select open KONICA MINOLTA bizhub C20 RSU format file (*.BIN).



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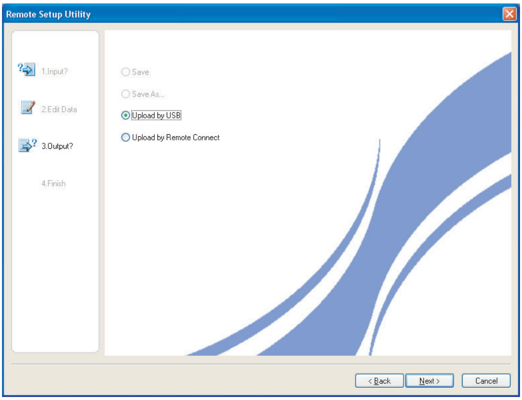
5.5.5 Clear Memory Data

1. Select the [Clear Memory Data] from the menu.
2. Click [Next].



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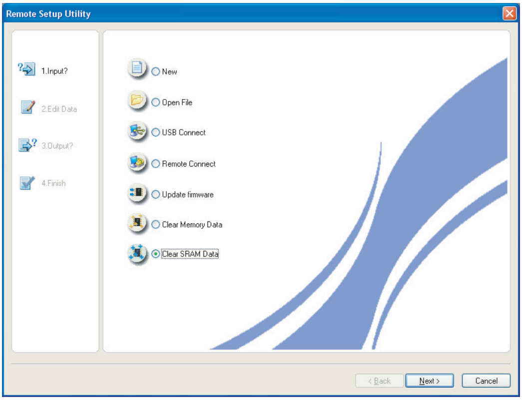
3. Select [Upload by USB] or [Upload by Remote Connect] according to the connection with the user machine.
4. Click [Next].



A0FDF2E547DA

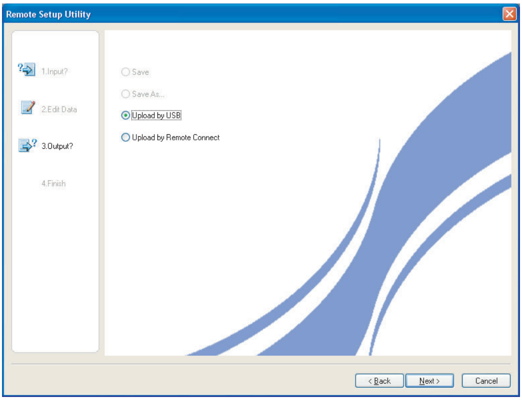
5.5.6 Clear SRAM Data

1. Select the [Clear SRAM Data] from the menu.
2. Click [Next].



A0FDF2E548DA

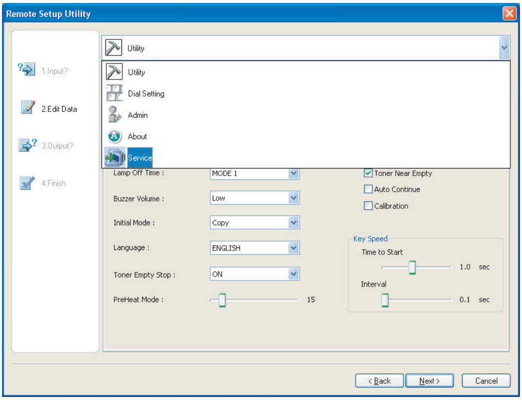
3. Select [Upload by USB] or [Upload by Remote Connect] according to the connection with the user machine.
4. Click [Next].



A0FDF2E547DA

5.6 Function setting

1. Select the function.

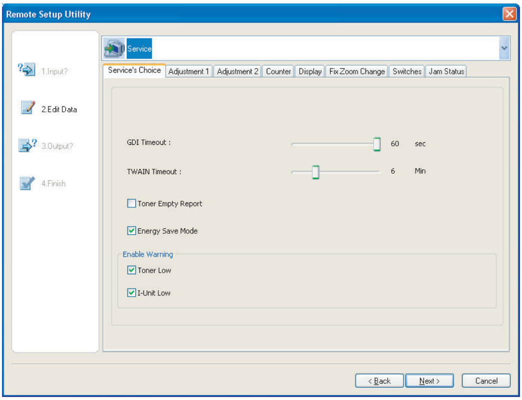


A0FDF2E539DA

NOTE

- **For details of each menu, see "Adjustment/Setting" and make the settings as necessary.**
  See P.127

2. Click [Next].

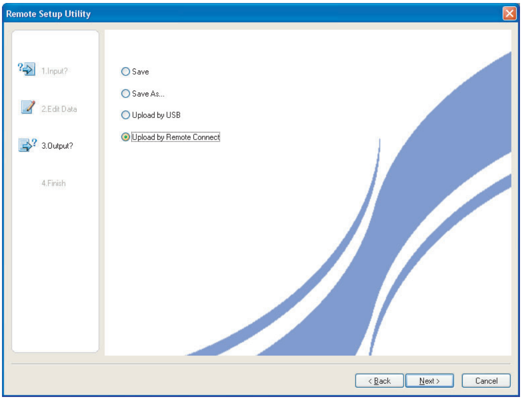


A0FDF2E540DA

bizhub C20

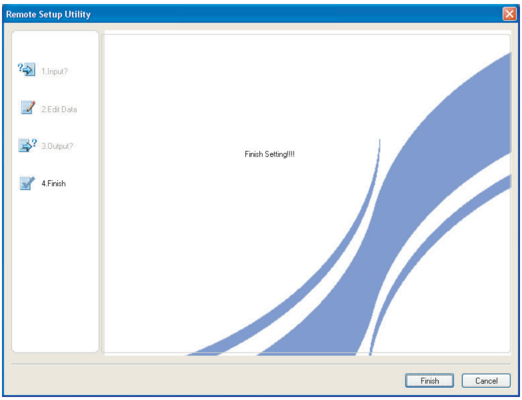
Maintenance

3. Select [Upload by USB] or [Upload by Remote Connect] according to the connection with the user machine.
4. Click [Next].



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5. This completes the setting change procedure for the user machine.



A0FDF2E550DA

5.7 Troubleshooting

5.7.1 Error message list

Error Message list	Causes
File format is error! Please select valid format !	• The format of file name list is incorrect.
Error opening USB Port !	• The USB port, which was specified, cannot be used for the computer that is in use.
Machine busy	• Since user machine is in use, it does not enable connection.
Machine timeout	• Timeout occurs during connection with user machine.
Connect error ! Change to off-line edit mode.	• Connection is not established because the USB cable is disconnected during USB connection or the user machine is turned OFF.
Please input [Dial Number] !	• No number is entered into the phone number list.
Connect Fail !	• Remote connection has been failed.
“ ” is not a valid integer value !	• The characters other than numeric value are entered.Or nothing is entered as being blank.
Invalid password : must be within 0000 to 9999 !	• The password entered is not correct.
Invalid password : must be within 000000 to 999999 !	
Phone number must be specified !	• Telephone number must be specified.
E-Mail address must be specified !	• Nothing is entered in E-mail address.
E-Mail address is invalid !	• E-mail address is incorrect.
Password is not correct !	• Since password is incorrect in “Administrator” of “Utility Setting”, it does not enable connection.
Group name Required !	• Nothing is entered into group name list.
Data List is empty !	• There is no group location list when registering the group.
THE PARTY IS FULL	• When trying to register destinations more than 50.

6. Firmware upgrade

6.1 Controller firmware upgrading

6.1.1 Preparations for firmware upgrading

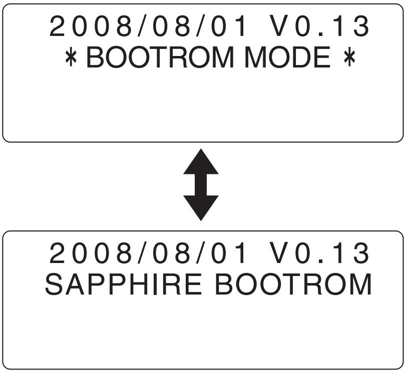
NOTE

- **Make sure that the scanner driver has been installed in the PC.**
- **Before updating the firmware, print Configuration Page to confirm the current Controller Firmware Version.**

See P.122

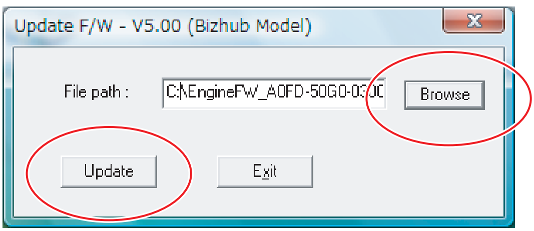
6.1.2 Upgrading procedure

1. Connect the machine and PC using the USB cable.
2. Turn ON the machine's main switch pressing Menu/Select key.
3. Confirm that [*BOOTROM MODE*] appears on the screen.



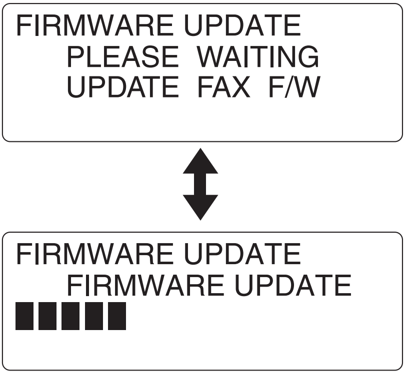
A0FDF2C576DA

4. Copy the firmware data and upgrading program in any arbitrary directory of the PC.
5. Double-click “Update.exe”.
6. Click [Browse] and select File path, “XXXXX.bin".
7. Click [Update].



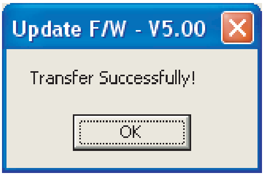
A0FDF2C591DA

8. Firmware updating starts.



A0FDF2C529DA

9. When [Transfer Successfully!] message appears on the screen, click [OK] to close the execution tool.



A0FDF2C530DA

10. Confirm that [FIRMWARE UPDATE OK] message has been displayed, and turn OFF/ ON the machine's main switch.



A0FDF3C531DA

11. Print [CONFIGURATION PAGE] to confirm the Controller Firmware Version.
See P.122

6.2 Firmware upgrading procedure by updater

6.2.1 Updating method

- To update the firmware, perform “Firmware Updater.”

A. System requirements

Computer	Windows	• PC with a Pentium 2, 400 MHz or faster processor (A Pentium 3, 500 MHz or faster processor is recommended.)
	Macintosh	• Apple Macintosh computer with a PowerPC G3 or later processor (A PowerPC G4 or later is recommended.)
OS	Windows	• Microsoft Windows Windows 2000 or later
	Macintosh	• MacOS X 10.2 or later (We recommend installing the newest patch.)
Available hard disk space	Windows	• Approximately 20 to 26 MB
	Macintosh	• Approximately 30 to 42 MB
Memory		• 128 MB or more
Interface	Windows	• 10Base-T/100Base-TX/1000Base-T Ethernet • USB 2.0 (High Speed) compliant • Parallel (IEEE 1284)
	Macintosh	• 10Base-T/100Base-TX/1000Base-T Ethernet

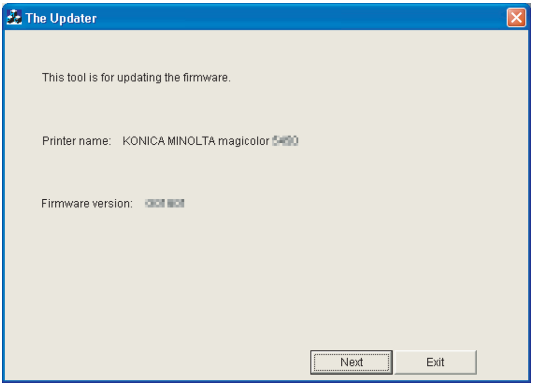
B. Connection for Windows

(1) Starting the firmware updater

NOTE

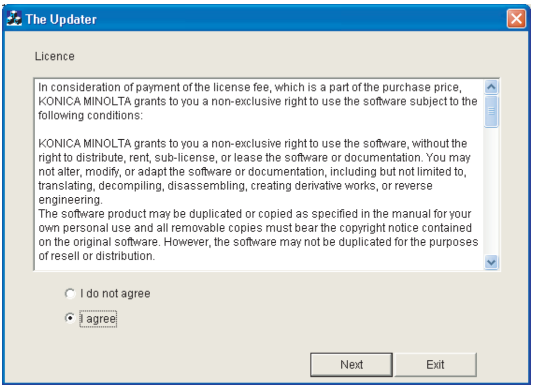
- **Before starting the firmware updater, turn on the printer, and make sure that it is correctly connected.**

1. Download the firmware updater.
2. Double-click “xxxxxxxxxxxx.exe.”
3. The printer name and firmware version are displayed. Click the [Next].



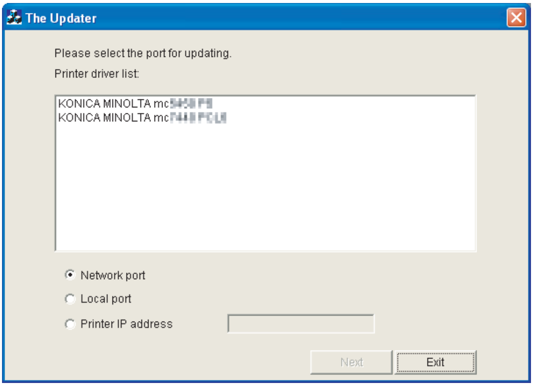
A011F2E555DA

4. The license agreement is displayed. Select “I agree”, and then click the [Next].



A011F2E556DA

5. The list of printer drivers is displayed. Select the appropriate connection for the environment where the printer is being used.



A011F2E557DA

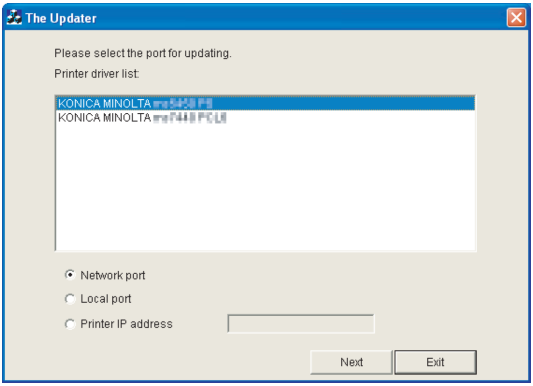
- For a network connection: Select "Network port."
  See P.47
- For a local connection: Select "Local port."
  See P.50
- When specifying the IP address of the printer: Select "Printer IP address."
  See P.51

NOTE

- **If you select "Network port" or "Local port", make sure that the printer driver has been installed.**
- **If you select "Printer IP address", the firmware can be updated even if a printer driver is not already installed.**

(2) For a network connection

1. When "Network port" is selected, a list of printer drivers for the network port appears.
2. Select the printer driver, and then click the [Next].

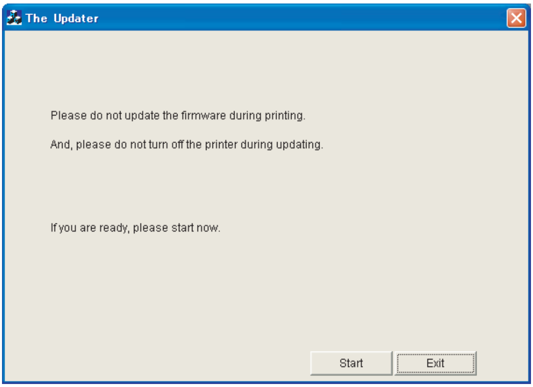


A011F2E558DA

3. A message appears, requesting confirmation to update the firmware. Click the [Start] to begin transferring the firmware.

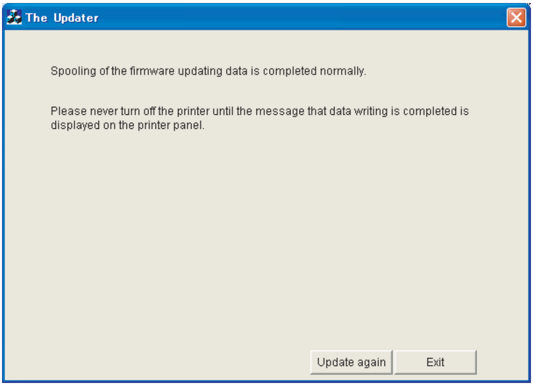
NOTE

- **Do not turn off the printer while its firmware is being updated.**



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4. The result of the firmware transfer is displayed. Click the [Exit].



A011F2E560DA

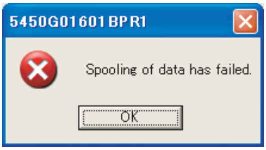
5. If the firmware was successfully updated, the printer will automatically restart.

<If spooling of the data fails>

NOTE

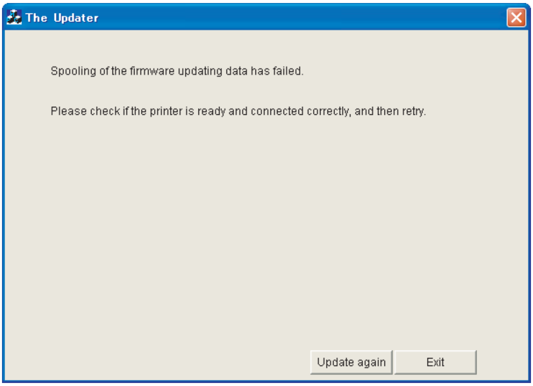
- **If spooling fails, data may remain in the printer spooler. Delete this data, and then try again.**

1. If spooling of the data fails, the following message appears.
2. Click [OK].



A011F2E561DA

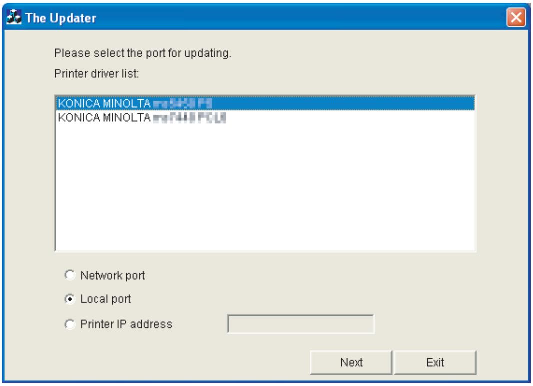
3. Check that the printer is ready and that it is correctly connected, and then click the [Update again].



A011F2E562DA

(3) For a local connection

1. When “Local port” is selected, a list of printer drivers for the local port appears.
2. Select the printer driver, and then click the [Next].

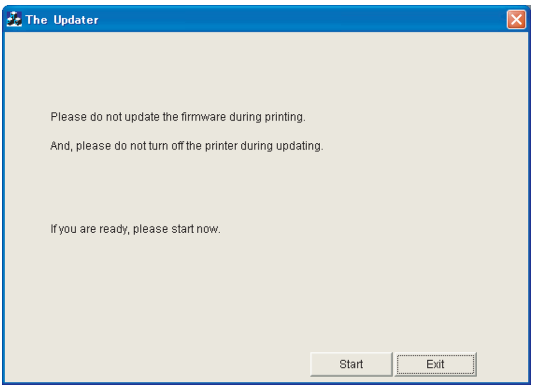


A011F2E563DA

3. A message appears, requesting confirmation to update the firmware. Click the [Start] to begin transferring the firmware.

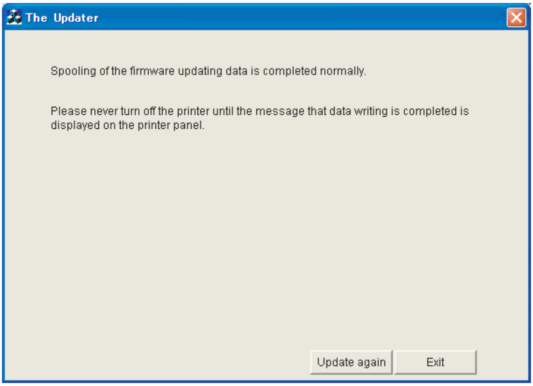
NOTE

- **Do not turn off the printer while its firmware is being updated.**



A011F2E564DA

4. The result of the firmware transfer is displayed. Click the [Exit].



A011F2E565DA

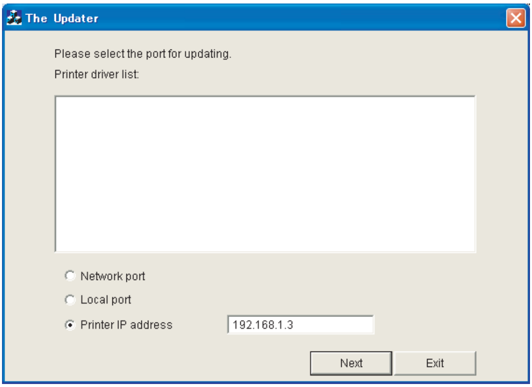
5. If the firmware was successfully updated, the printer will automatically restart.

<If spooling of the data fails>

For details, see "For a network connection."
See P.49

(4) When specifying the IP address of the printer

1. When "Printer IP address" is selected, the "Printer IP address" box becomes available.
2. Type in the IP address, and then click the [Next].

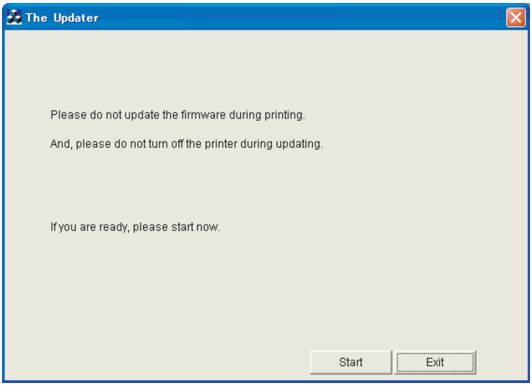


A011F2E566DA

3. A message appears, requesting confirmation to update the firmware. Click the [Start] to begin transferring the firmware.

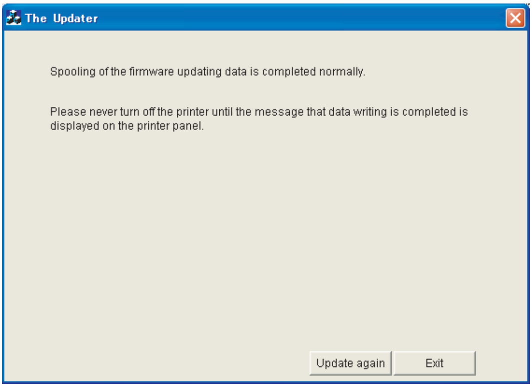
NOTE

- **Do not turn off the printer while its firmware is being updated.**



A011F2E567DA

4. The result of the firmware transfer is displayed. Click the [Exit].

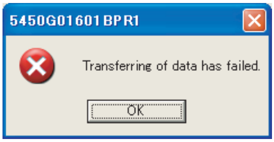


A011F2E565DA

5. If the firmware was successfully updated, the printer will automatically restart.

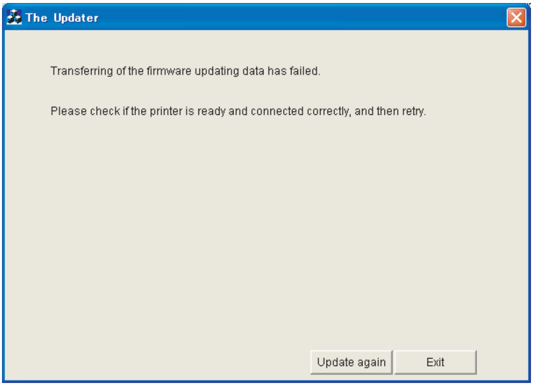
<If transferring of the data fails>

1. If transferring of the data fails, the following message appears.
2. Click [OK].



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3. Check that the printer is ready and that it is correctly connected, and then click the [Update again].



A011F2E570DA

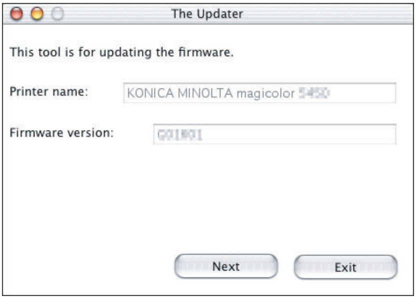
C. Connection for Macintosh

(1) Starting the firmware updater and the updating procedure

NOTE

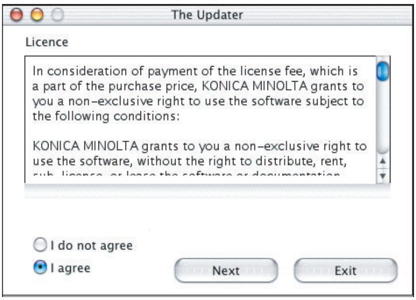
- **Before starting the firmware updater, turn on the printer, and make sure that it is correctly connected.**

1. Download the firmware updater.
2. Double-click “xxxxxxxxxxxx.”
3. The printer name and firmware version are displayed. Click the [Next].



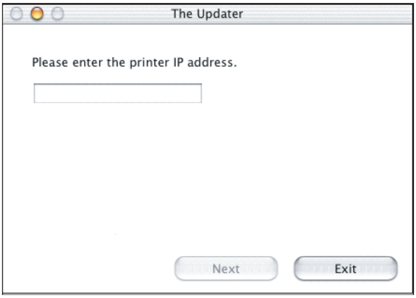
A011F2E571DA

4. The license agreement is displayed. Select “I agree”, and then click the [Next].



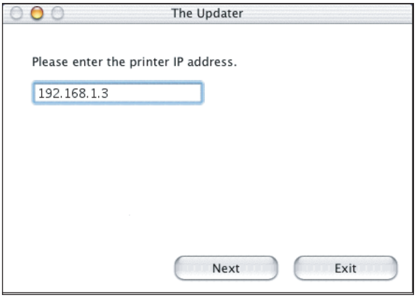
A011F2E572DA

5. The screen for specifying the IP address of the printer appears.



A011F2E573DA

6. Type in the IP address, and then click the [Next].

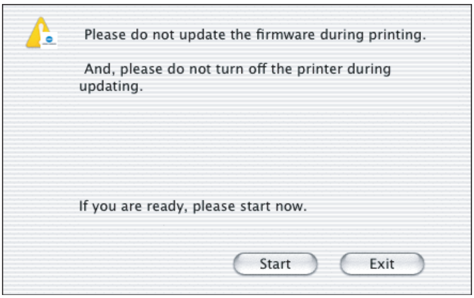


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7. A message appears, requesting confirmation to update the firmware. Click the [Start] to begin transferring the firmware.

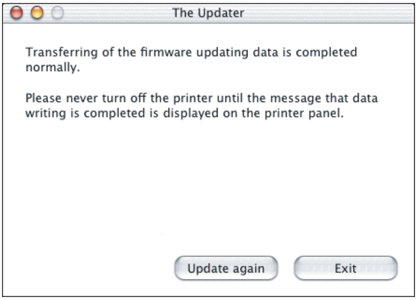
NOTE

- **Do not turn off the printer while its firmware is being updated.**



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8. The result of the firmware transfer is displayed. Click the [Exit].

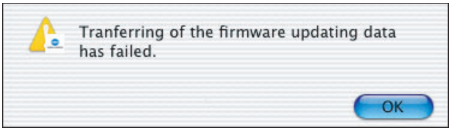


A011F2E576DA

9. If the firmware was successfully updated, the printer will automatically restart.

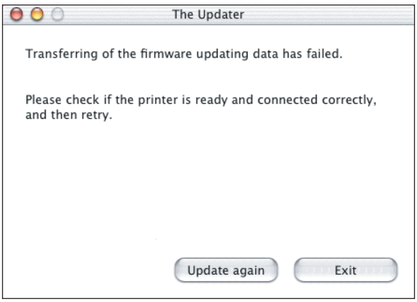
<If transferring of the data fails>

1. If transferring of the data fails, the following message appears.
2. Click [OK].



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3. Check that the printer is ready and that it is correctly connected, and then click the [Update again].



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7. Other

7.1 Disassembly/adjustment prohibited items

A. Paint-locked screws

NOTE

- **To prevent loose screws, a screw lock in blue or green series color is applied to the screws.**
- **The screw lock is applied to the screws that may get loose due to the vibrations and loads created by the use of machine or due to the vibrations created during transportation.**
- **If the screw lock coated screws are loosened or removed, be sure to apply a screw lock after the screws are tightened.**

B. Red-painted screws

NOTE

- **The screws which are difficult to be adjusted in the field are painted in red in order to prevent them from being removed by mistake.**
- **Do not remove or loosen any of the red-painted screws in the field. It should also be noted that, when two or more screws are used for a single part, only one representative screw may be marked with the red paint.**

C. Variable resistors on board

NOTE

- **Do not turn the variable resistors on boards for which no adjusting instructions are given in Adjustment/Setting.**

D. Removal of PWBs

⚠ CAUTION

- **When removing a circuit board or other electrical component, refer to “Handling of PWBs” and follow the corresponding removal procedures.**
- **The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.**
- **Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.**

7.2 Disassembly/assembly/cleaning list (other parts)

7.2.1 Disassembly/assembly parts list

No	Section	Part name	Ref.Page
1	Exterior parts	Front cover	P.60
2		Right front cover	P.60
3		Operation panel	P.61
4		Left cover	P.61
5		Rear cover	P.62
6		Right rear cover	P.62
7		Tray 2	P.63
8	Boards and etc.	MFP board/2 (MFPB/2)	P.63
9		NCU board (NCUB)	P.64
10		MFP board/1 (MFPB/1)	P.65
11		Print control board (PRCB)	P.66
12		DC power supply (DCPU)	P.68
13		High voltage unit/1 (HV1)	P.71
14		High voltage unit/2 (HV2)	P.72
15		Relay board (REYB)	P.73
16		Toner level sensor board (TLSB)	P.75
17	Units	PH unit	P.78
18		Driving unit	P.85
19		Scanner unit	P.86
20		Exposure unit	P.87
21	Other parts	Backup battery	P.89
22		PWB box	P.90
23		PWB box lower cover	P.94
24		Color PC drum motor (M2)	P.94
25		Transport motor (M3)	P.95
26		Fusing motor (M4)	P.95
27		K developing motor (M5)	P.95
28		Toner supply motor/Y,M (M6)	P.96
29		Toner supply motor/C,K (M7)	P.96
30		Scanner motor (M100)	P.97
31		Media feed clutch assy	P.99
32		Registration roller clutch (CL3)	P.100
33		1st image transfer retraction position clutch (CL4)	P.101
34		2nd image transfer retraction position clutch (CL5)	P.102
35		Swichback roller feed clutch (CL11)	P.103
36		Switchback roller reverse clutch (CL12)	P.105
37		Duplex transport roller clutch (CL13)	P.106
38		Temperature/ humidity sensor (TEM/HUMS)	P.108

No	Section	Part name	Ref.Page
39	Other parts	IDC sensor board /Re (IDCSB/R)	P.109
40		IDC sensor board /Fr (IDCSB/F)	
41		Speaker (SP1)	P.110
42		Memory (DIMM)	P.110
43		Hard disk	P.111

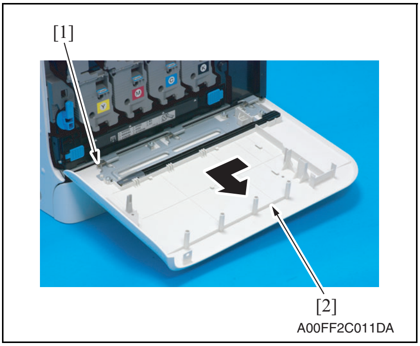
7.2.2 Cleaning parts list

No	Section	Part name	Ref.Page
1	Tray 1	Feed roller	P.112
2	Tray 2	Feed roller	P.112
3	Vertical transport section	Vertical transport roller	P.113
4	Processing section	Laser irradiation section	P.113

7.3 Disassembly/assembly procedure

7.3.1 Front cover

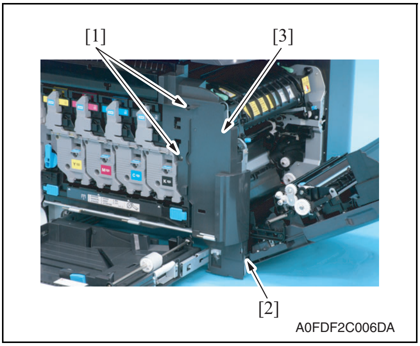
1. Open the front cover.



2. Remove the E-ring [1].
3. Slide the front cover [2] to the left off the machine.

7.3.2 Right front cover

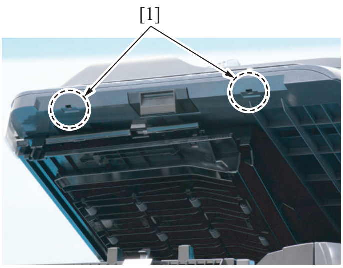
1. Remove the front cover.
   See P.60
2. Open the right door.
3. Slide out the tray 2.



4. Remove two screws [1], and unhook the tab [2].
5. Remove the right front cover [3].

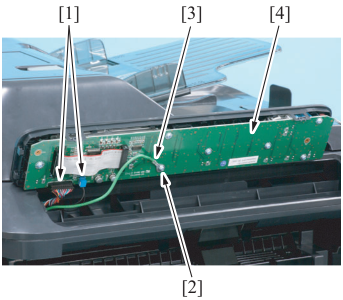
7.3.3 Operation panel

1. Open the front cover.
2. Open the scanner unit.



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3. Unhook two tabs [1].

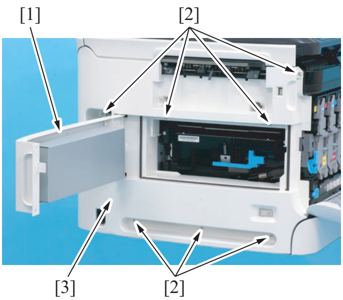


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4. Disconnect two connectors [1].
5. Remove the screw [2] and the ground terminal [3], and remove the operation panel [4].

7.3.4 Left cover

1. Open the front cover.
2. Open the scanner unit.

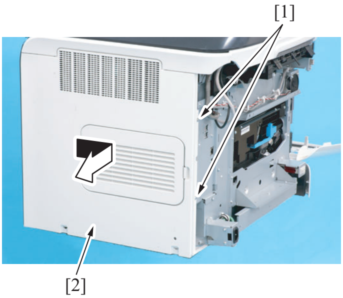


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3. Open the left side cover [1], and remove seven screws [2], and remove the left cover [3].

7.3.5 Rear cover

1. Remove the left cover.
   See P.61
2. Close the scanner unit.

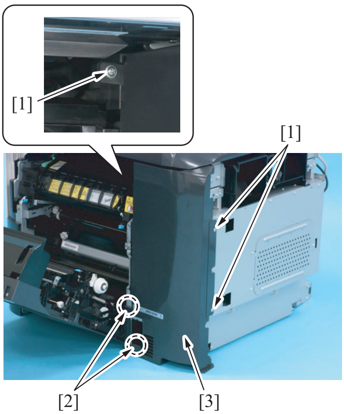


A0FDF2C010DA

3. Remove two screws [1].
4. Slide the rear cover [2] in the direction shown in the illustration on the left off the machine.

7.3.6 Right rear cover

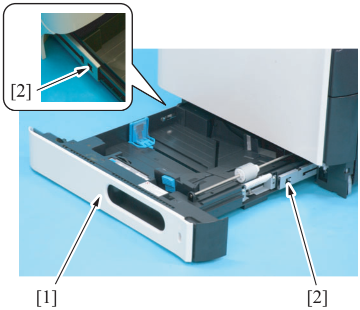
1. Remove the rear cover.
   See P.62
2. Remove the ozone filter.
   See P.12
3. Open the right door.



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4. Remove three screws [1], and unhook two tabs [2], and remove the right rear cover [3].

7.3.7 Tray 2

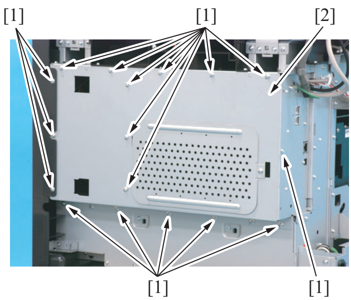


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1. Slide out tray 2 [1].
2. Pressing the tabs [2] on both sides, remove tray 2 [1].

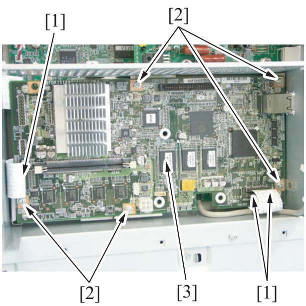
7.3.8 MFP board/2 (MFPB/2)

1. Remove the rear cover.
   See P.62
2. Remove the memory.
   See P.110
3. Remove the hard disk.
   See P.111



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4. Remove seventeen screws [1], and remove the board protective shield [2].

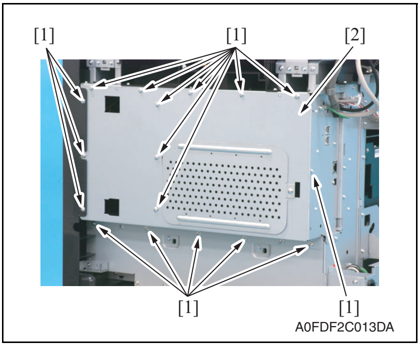


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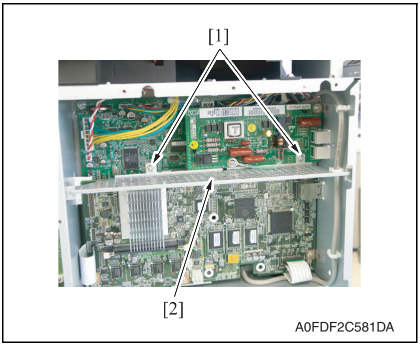
5. Remove three flat cables [1].
6. Remove five screws [2], and remove the MFP board/2 [3].

7.3.9 NCU board (NCUB)

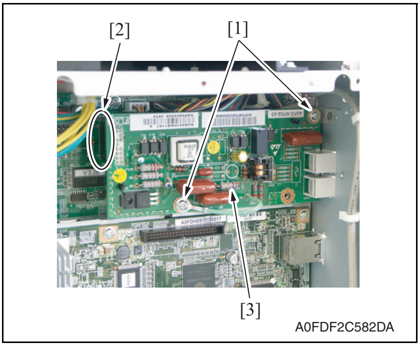
1. Remove the rear cover.
   See P.62



2. Remove seventeen screws [1], and remove the board protective shield [2].



3. Remove two screws [1], and remove the sheet metal [2].



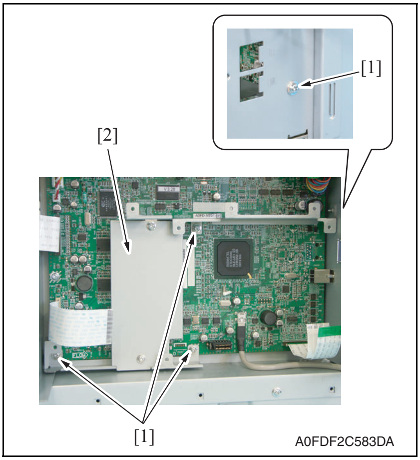
4. Remove two screws [1] and disconnect the connector [2], and remove the NCU board [3].

7.3.10 MFP board/1 (MFPB/1)

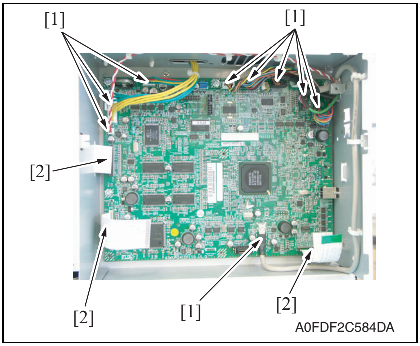
NOTE

- **After the MFP board/1 replacement, you need to set the language to be displayed on the control panel again.**
  See P.132

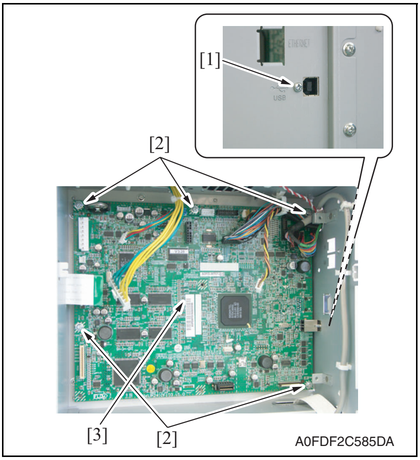
1. Remove the rear cover.
   See P.62
2. Remove the NCU board.
   See P.64
3. Remove the MFP board/2.
   See P.63



4. Remove four screws [1], and remove the sheet metal [2].



5. Disconnect nine connectors [1] on the MFP board/1.
6. Remove three flat cables [2].



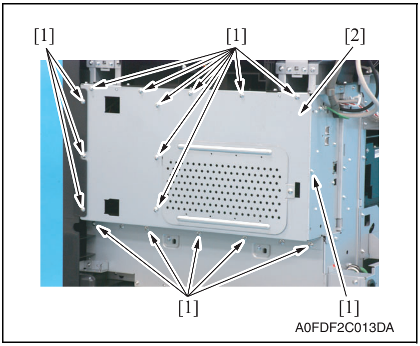
7. Remove the screw [1].
8. Remove five screws [2], and remove the MFP board/1 [3].
9. Remove the backup battery from the MFP board/1.
   See P.89

NOTE

- **When the MFP board/1 is replaced, upgrade the firmware to the latest version.**
  See P.42

7.3.11 Print control board (PRCB)

1. Remove the rear cover.
   See P.62
2. Remove the right rear cover.
   See P.62

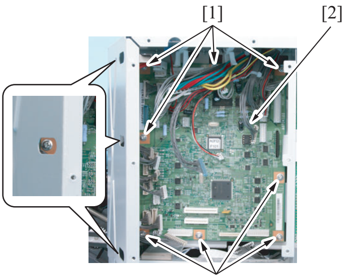


3. Remove seventeen screws [1], and remove the board protective shield [2].



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4. Disconnect all connectors and flat cables from the print control board.



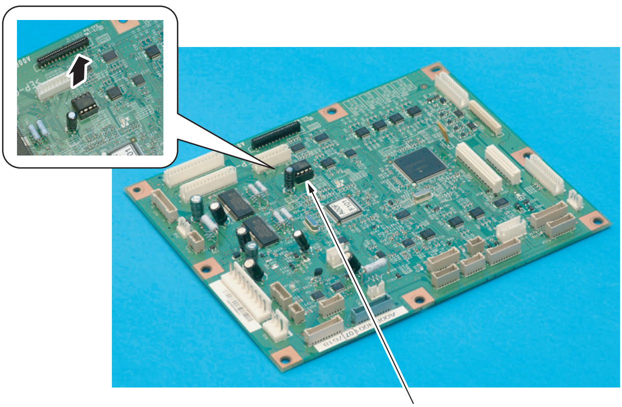
A0FDF2C587DA

5. Remove eight screws [1], and remove the print control board [2].

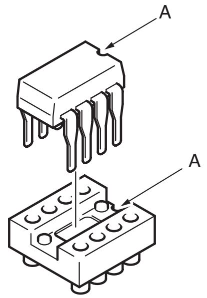
6. Remove parameter chip [1] from the print control board.

NOTE

- **When the print control board (PRCB) has been replaced, be sure to remount parameter chip. Unmount parameter chip from the old print control board and mount it on the new print control board.**



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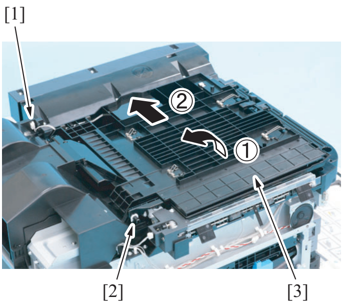


4138fs2544c0

NOTE
- **When mounting parameter chip, make sure the notches (“A”) are precisely lined up.**

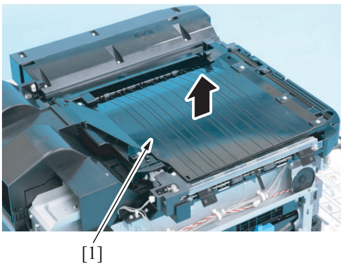
7.3.12 DC power supply (DCPU)

1. Remove the right rear cover.
   See P.62
2. Remove the scanner unit.
   See P.86



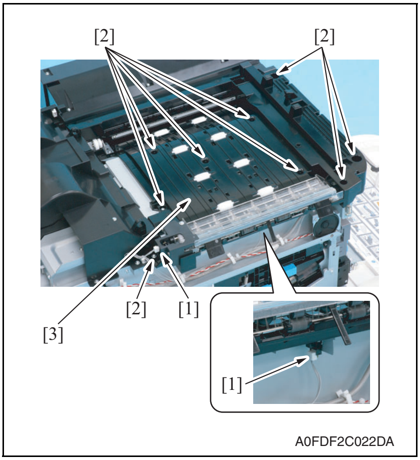
A0FDF2C020DA

3. Disconnect the connector [1].
4. Remove the C-clip [2], and remove the horizontal transport unit cover [3].

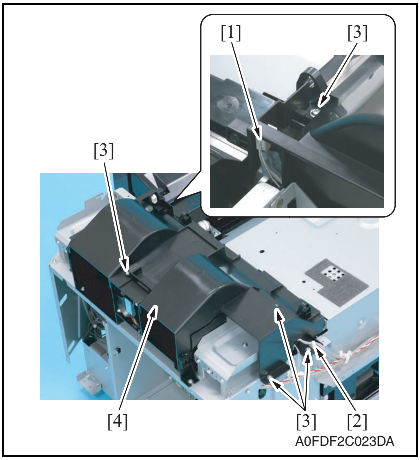


A0FDF2C021DA

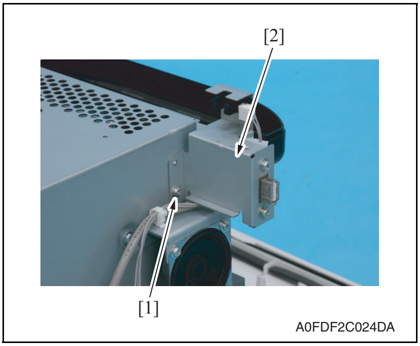
5. Remove the horizontal transport unit (upper section) [1].



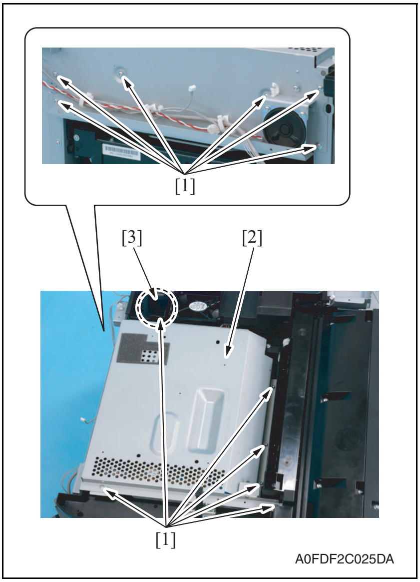
6. Disconnect two connectors [1].
7. Remove nine screws [2], and remove the horizontal transport unit (lower section) [3].



8. Disconnect the connector [1], and remove the harness from the wire saddle [2].
9. Remove five screws [3], and remove the duct cover [4].



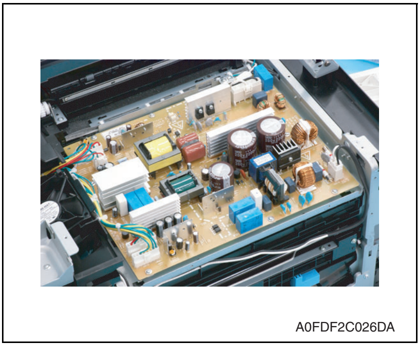
10. Remove the screw [1], and remove the metal plate [2].



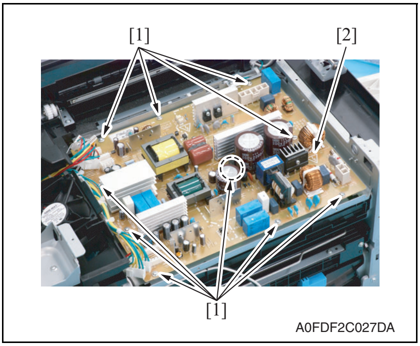
11. Remove twelve screws [1], and remove the DC power supply protective cover [2].

NOTE

- **To remove the screw shown in the figure on the left [3], access the screw by peeling off the protective seal from the duct.**



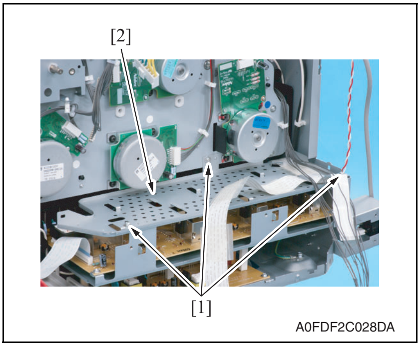
12. Disconnect all connectors from the DC power supply.



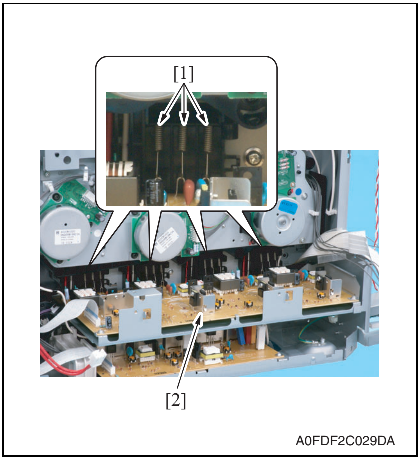
13. Remove ten screws [1], and remove the DC power supply [2].

7.3.13 High voltage unit/1 (HV1)

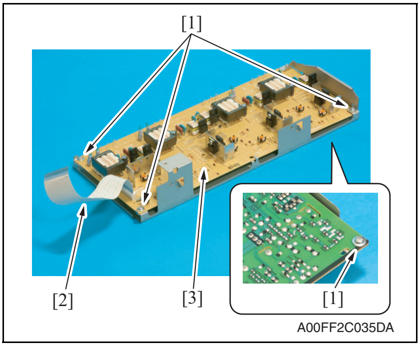
1. Remove PWB box.
   See P.90
2. Remove PWB box lower cover.
   See P.94



3. Remove three screws [1], and remove the harness plate [2].



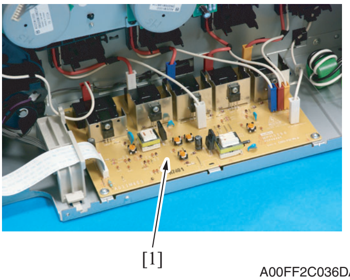
4. Remove twelve springs [1], and remove the high voltage unit/1 assy [2].



5. Remove four screws [1] and the flat cable [2], and remove the high voltage unit/1 [3].

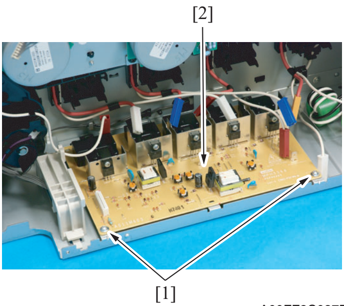
7.3.14 High voltage unit/2 (HV2)

1. Remove the high voltage unit/1.
   See P.71



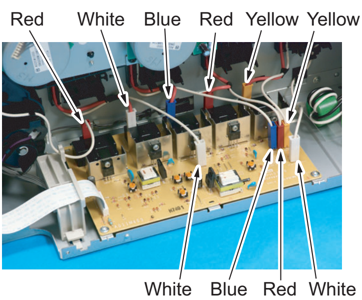
A00FF2C036DA

2. Disconnect all connectors and flat cables from high voltage unit/2 [1].



A00FF2C037DA

3. Remove two screws [1], and remove the high voltage unit/2 [2].



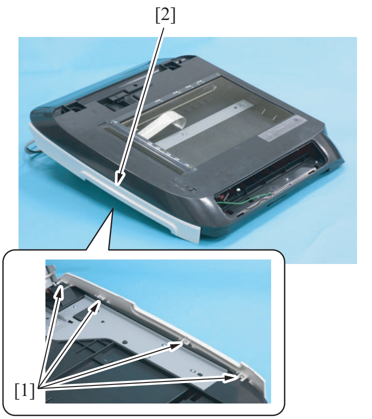
A00FF2E115DA

NOTE

- **When reinstalling high voltage unit/2, make sure that each color connector is in the correct position, as shown in the illustration on the left.**

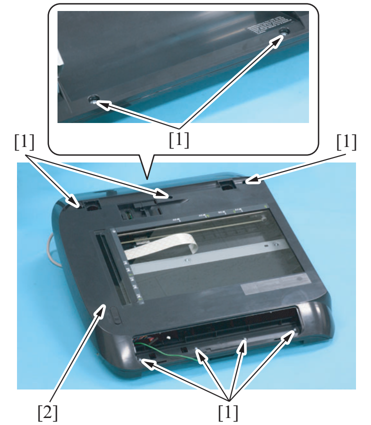
7.3.15 Relay board (REYB)

1. Remove the operation panel.
   See P.61
2. Remove the scanner unit.
   See P.86



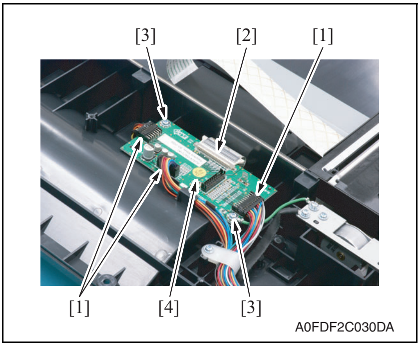
A0FDF2C048DA

3. Loosen four screws [1], and remove the scanner left cover [2].



A0FDF2C049DA

4. Remove nine screws [1], and remove the original grass assy [2].



5. Disconnect three connectors [1] and the flat cable [2].
6. Remove two screws [3], and remove the relay board [4].

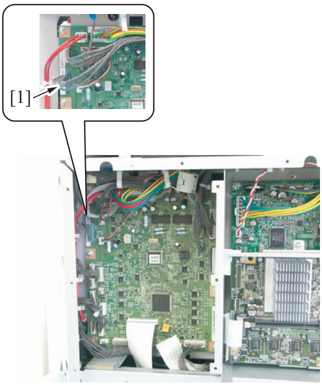
7.3.16 Toner level sensor board (TLSB)

1. Open the front cover.
2. Remove the toner cartridge (C, M, Y, K).
   See P.13
3. Remove the imaging unit (C, M, Y, K).
   See P.16

NOTE

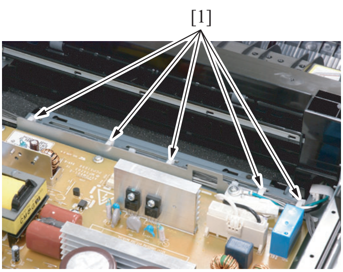
- **After the imaging unit has been removed from the main body, be sure to place it in the plastic bag (black) or wrap it in a light shielding cloth, and store it in a dark place.**
  Do not leave the imaging unit exposed to light for a extended period of time, as it may become damaged.

4. Remove the waste toner bottle.
   See P.20
5. Remove the right front cover.
   See P.60
6. Remove the board protective shield.
   See the steps 1 to 4 on P.66 “Print control board (PRCB)”.
7. Remove the DC power supply protective cover.
   See the steps 1 to 11 on P.68 “DC power supply (DCPU)”.



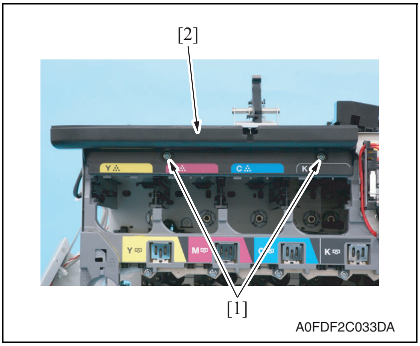
A0FDF2C588DA

8. Disconnect the connector [1] from the print control board.

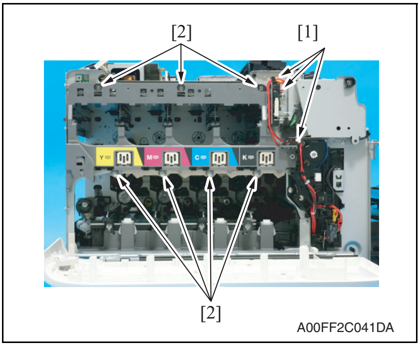


A0FDF2C032DA

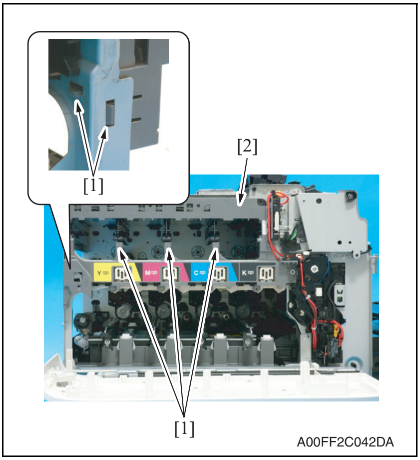
9. Remove the harness from five wire saddles [1].



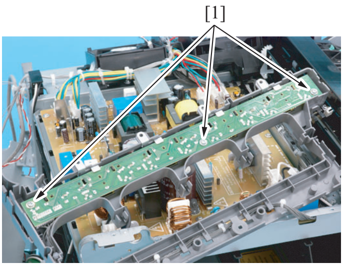
10. Remove two screws [1], and remove the upper front cover [2].



11. Disconnect three connectors [1], and remove seven screws [2].

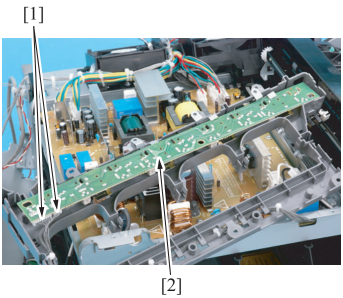


12. Remove five tabs [1], and remove the toner level sensor board assy [2].



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13. Remove three screws [1].



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14. Disconnect two connectors [1], and remove the toner level sensor board [2].

7.3.17 PH unit

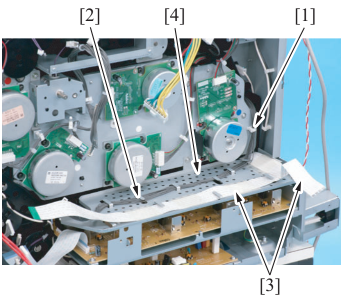
A. Removal procedure

1. Open the front cover.
2. Remove the toner cartridge (C, M, Y, K).
   See P.13
3. Remove the imaging unit (C, M, Y, K).
   See P.16

NOTE

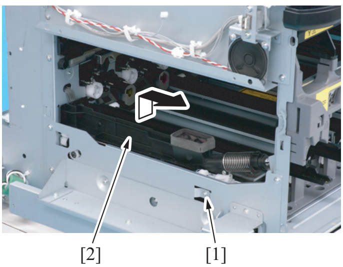
- **After the imaging unit has been removed from the main body, be sure to place it in the plastic bag (black) or wrap it in a light shielding cloth, and store it in a dark place.**
  Do not leave the imaging unit exposed to light for a extended period of time, as it may become damaged.

4. Remove the waste toner bottle.
   See P.20
5. Remove the transfer belt.
   See P.23
6. Remove the PWB box.
   See P.90



A0FDF2C036DA

7. Remove the harness [2] from the wire saddle [1].
8. Remove the harness [2] and two flat cables [3] from the harness plate [4].

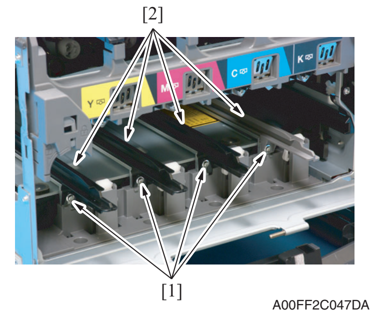


A0FDF2C037DA

9. Remove the screw [1], and remove the drawing up transportation assy [2].

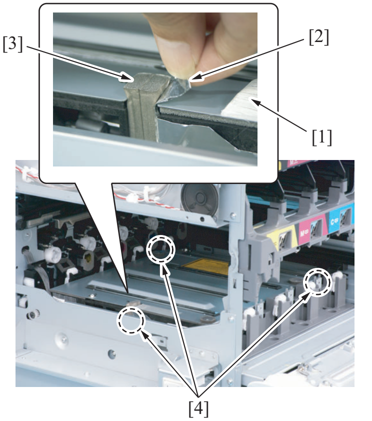
NOTE

- **Waste toner may spill out from the waste toner inlet of the drawing up transportation assy.**
  Take care not to tilt the waste toner inlet when removing the drawing up transportation assy. The drawing up transportation assy also needs to be placed in a horizontal position where no waste toner will spill out.



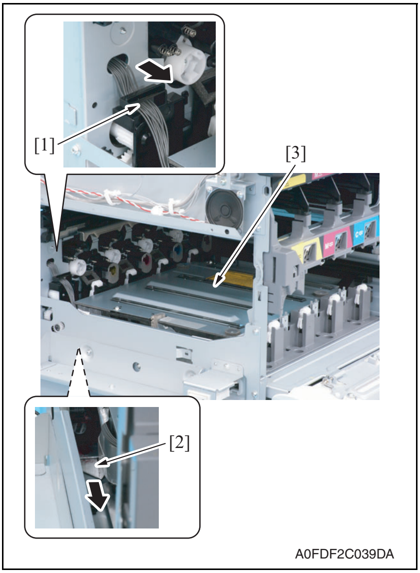
A00FF2C047DA

10. Remove four screws [1], and remove corresponding four imaging unit rails [2].



A0FDF2C038DA

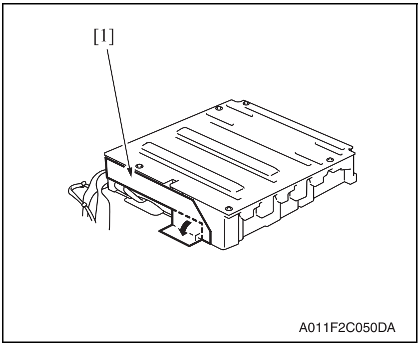
11. Remove the tape [1], pull the aluminum part [2], and remove the gasket [3].
12. Remove three shoulder screws [4] of the PH unit.



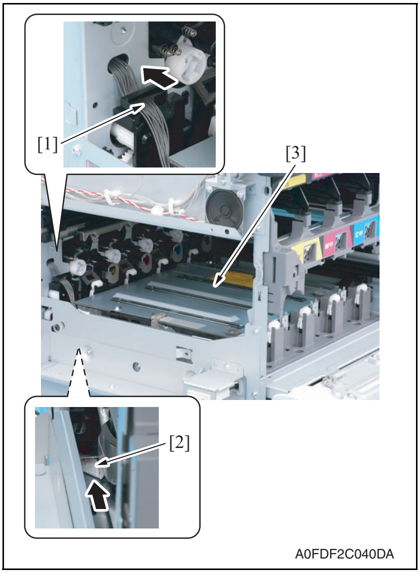
13. Pull the connector [1] and the flat cable [2] out, and remove the PH unit [3].

B. Reinstallation procedure

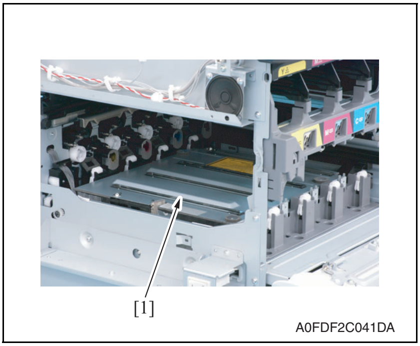
1. Remove the shipping tape affixed on the new PH unit shield sheet.



2. Unfold the rectangular area of the shield sheet [1] so that the part is lying flat.

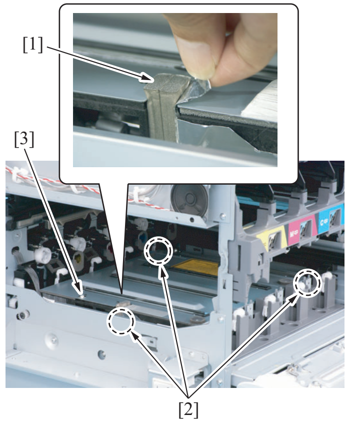


3. Insert the PH unit connector [1] and flat cable [2] from the positions shown in the left illustration. Then route them to the rear direction.



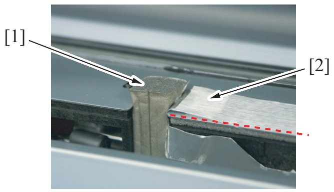
4. Install the PH unit [1] into the main body.

NOTE
- **After the PH unit installation, check that the shield sheet is grounded properly onto the base of the PH unit.**
- **Make sure that the shield sheet does not have any unnecessary crease, positional misalignment nor loose attachment.**



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5. Remove the gasket [1] that secures the shoulder screw in position.
6. Fix the PH unit [3] with three shoulder screws [2].

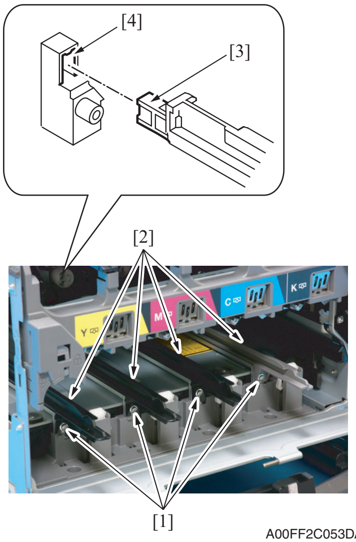


A00FF2C506DA

7. Reinstall the gasket [1] and fasten the aluminum part with tape [2].

NOTE

- **Make sure that the gasket [1] is pushed against the shoulder screw.**
- **Tape must be located on the upper side of the dotted line as shown in the illustration.**

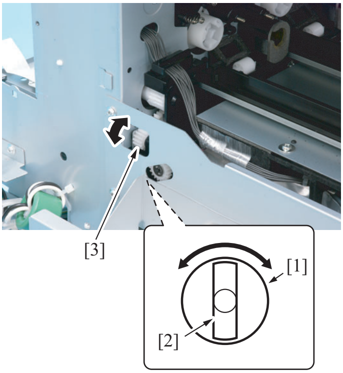


A00FF2C053DA

8. Attach the four imaging unit rails [2] with one screw [1] for each rail.

NOTE

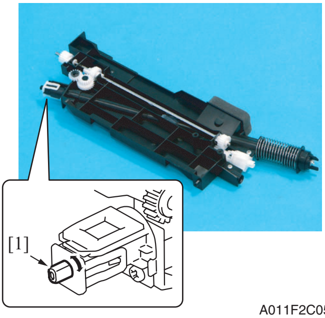
- **Make sure that the convex parts [3] at rear end of the rail are fit in the locating hole [4] on the main body.**



A0FDF2C043DA

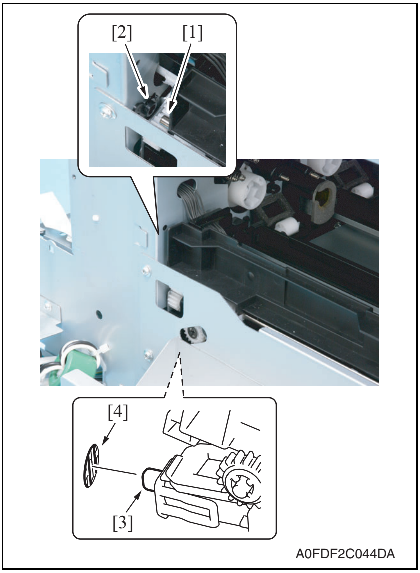
9. Install the drawing up transportation assy into the main body.

<1> Turn the middle drive gear [3] so that the rear gear [1] keeps its own rectangular slot vertically long.



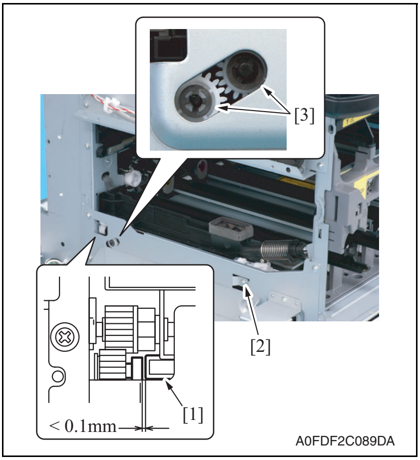
A011F2C055DA

<2> Turn the connecting part [1] so that it becomes vertically long.



<3> Insert the drawing up transportation assy shaft [1] into the rear mounting hole [2].

<4> Insert the connecting part [3] of the drawing up transportation assy into the rear gear slot [4].



10. While pushing the positioning protrusion [1] of the drawing up transportation assy against the housing, fix the assy with one screw [2].

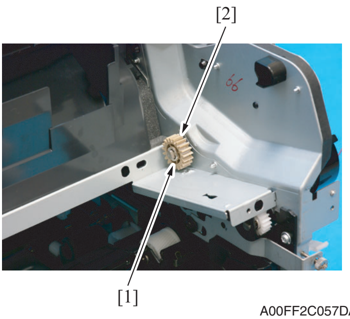
NOTE

- **Check that the two drive gears [3] of the drawing up transportation assy are engaged.**
- **Use a 0.1 mm piece of a thickness gauge to check the gap between the positioning protrusion [1] and the main body frame. Make sure that the piece of the thickness gauge cannot pass through the gap. (A transparency can replace the thickness gauge.)**
- **Check that the shield sheet which confirmed in step 4, is well grounded onto PH unit base plate at malt of drawing up transportation assy.**

11. To reinstall, reverse the order of removal.

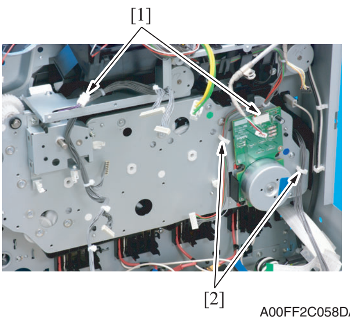
7.3.18 Driving unit

1. Remove the fuser unit.
   See P.26
2. Remove the harness plate of the high voltage unit/1.
   See the steps 1 to 3 on P.71 “High voltage unit”.
3. Remove the color PC drum motor.
   See P.94
4. Remove the K developing motor.
   See P.95
5. Remove the fusing motor.
   See P.95
6. Remove the transport motor.
   See P.95
7. Remove the media feed clutch assy.
   See P.99
8. Remove the switchback roller feed clutch unit.
   See the steps 1 to 2 on P.103 “Switchback roller feed clutch”.



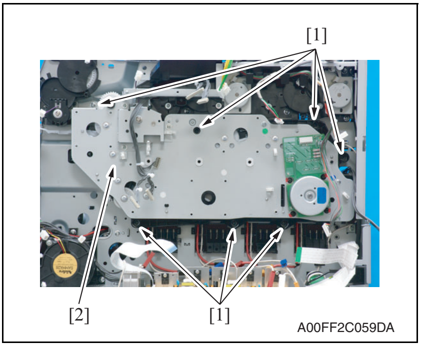
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9. Remove the E-ring [1], and remove the gear [2].



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10. Disconnect two connectors [1].
11. Remove the harness from two wire saddles [2].



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12. Remove seven screws [1], and remove the driving unit [2].

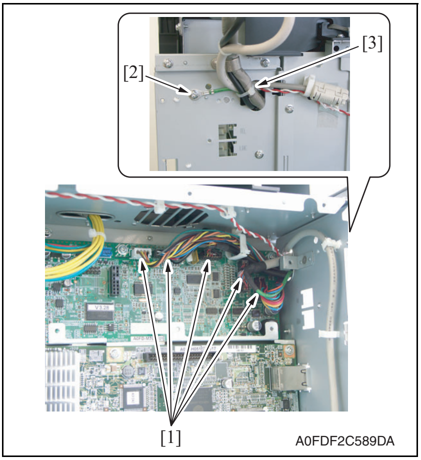
NOTE

- **When installing the driving unit assy, take care not to damage or soil the gears.**

13. Remove the 1st image transfer pressure/retraction clutch assy.
    See the steps 1 to 2 on P.101 “1st image transfer pressure/retraction clutch”.

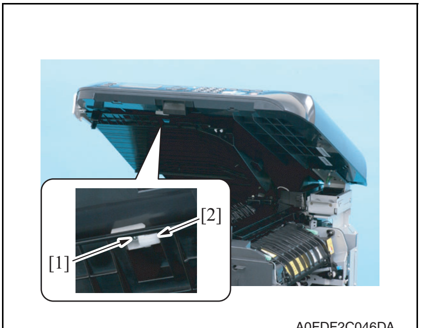
7.3.19 Scanner unit

1. Remove the NCU board.
   See P.64



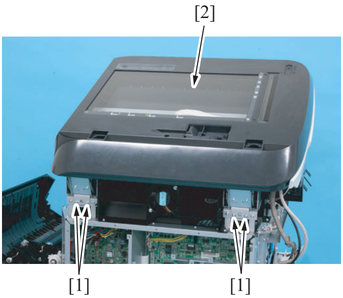
A0FDF2C589DA

2. Disconnect five connector [1], and remove the screw [2] of the ground terminal.
3. Pull out the harnesses from the metal plate [3].



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4. Open the scanner unit.
5. Remove the screw [1], and remove the stopper [2].



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6. Remove four screws [1], and remove the scanner unit [2].

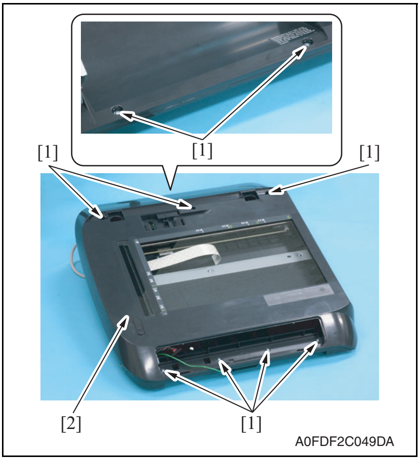
7.3.20 Exposure unit

1. Remove the operation panel.
   See P.61
2. Remove the scanner unit.
   See P.86

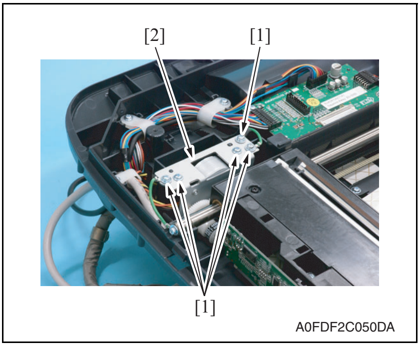


A0FDF2C048DA

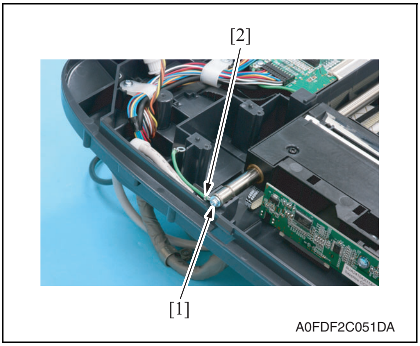
3. Loosen four screws [1], and remove the scanner left cover [2].



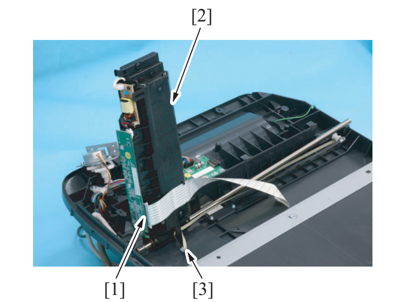
4. Remove nine screws [1], and remove the original grass assy [2].



5. Remove five screws [1], and remove the scanner motor assy

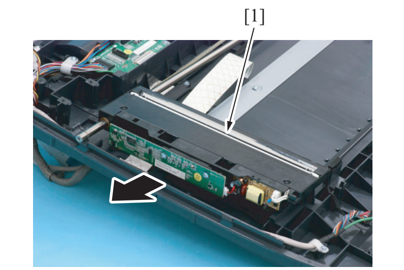


6. Remove the screw [1], and remove the ground terminal [2].



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7. Disconnect the flat cable [1] of the exposure unit [2].
8. Remove the scanner belt [3].



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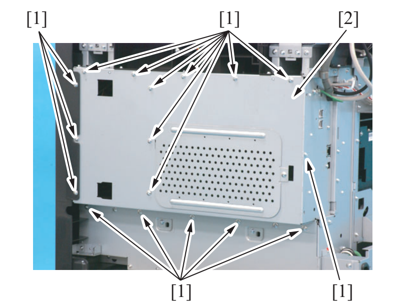
9. Pull out the exposure unit [1] from the shaft, and remove it.

7.3.21 Backup Battery

NOTE

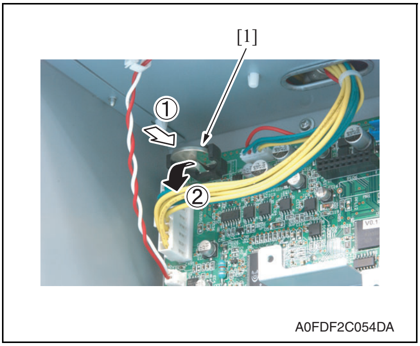
- **This printer uses a lithium battery to backup memory. Replace the battery with our specified memory backup battery (CR2032). Use of a different battery or the one not equal to our specified battery may present risk of explosion.**
- **Before your backup battery replacement, refer to the section of removal of PWBs on P.57.**
- **When working with MFP board/1, hold the boards only by the edges.**

1. Remove the rear cover.
   See P.62



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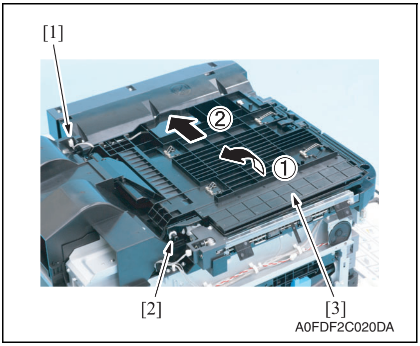
2. Remove seventeen screws [1], and remove the board protective shield [2].



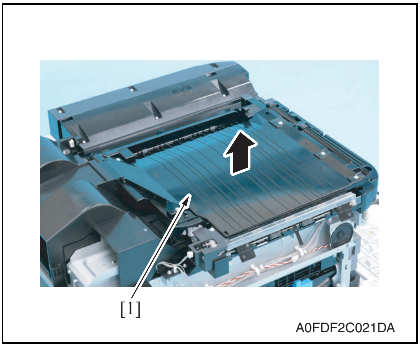
3. Press the backup battery [1] in the way shown in the illustration on the left and remove it from the housing.
4. Remove the backup battery [1].

7.3.22 PWB box

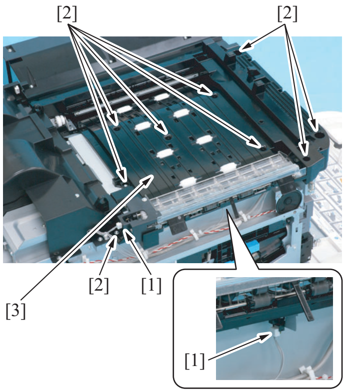
1. Remove the right rear cover.
   See P.62
2. Remove the scanner unit.
   See P.86
3. Remove the MFP board/1.
   See P.65
4. Remove the print control board.
   See P.66



5. Disconnect the connector [1].
6. Remove the C-clip [2], and remove the horizontal transport unit cover [3].

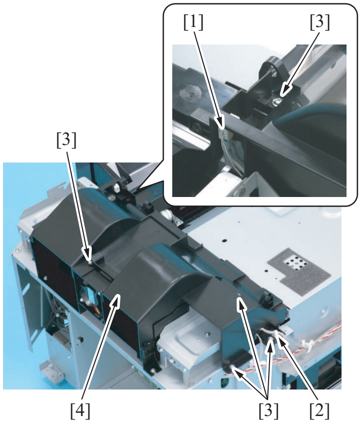


7. Remove the horizontal transport unit (upper section) [1].



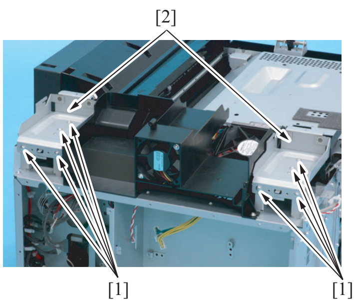
A0FDF2C022DA

8. Disconnect the connector [1].
9. Remove nine screws [2], and remove the horizontal transport unit (lower section) [3].



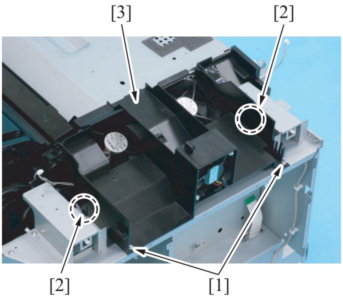
A0FDF2C023DA

10. Disconnect the connector [1], and remove the harness from the wire saddle [2].
11. Remove five screws [3], and remove the duct cover [4].



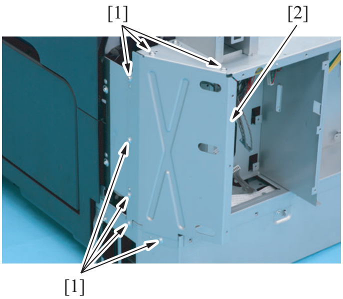
A0FDF2C055DA

12. Remove four each screws [1] and the two bases [2] of the scanner unit.



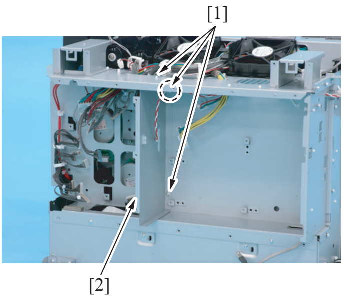
A0FDF2C056DA

13. Remove two screws [1], unhook two tabs [2], and remove the duct assy [3].



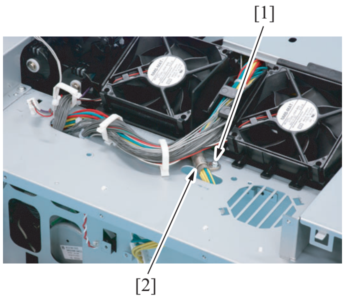
A0FDF2C057DA

14. Remove seven screws [1], and remove the cover [2].



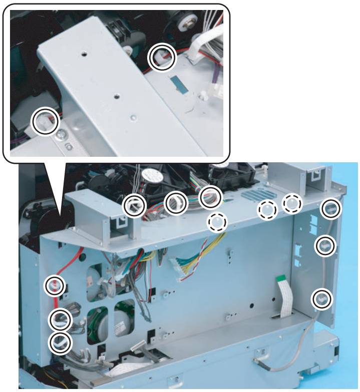
A0FDF2C058DA

15. Remove three screws [1], and remove the metal plate [2].



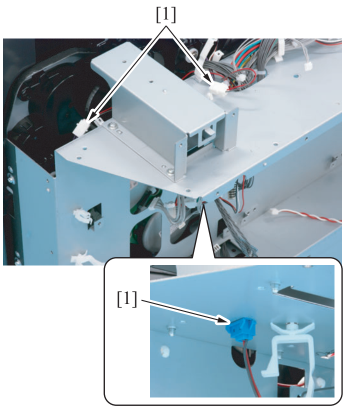
A0FDF2C059DA

16. Remove the screw [1], and remove the harness clamp [2].



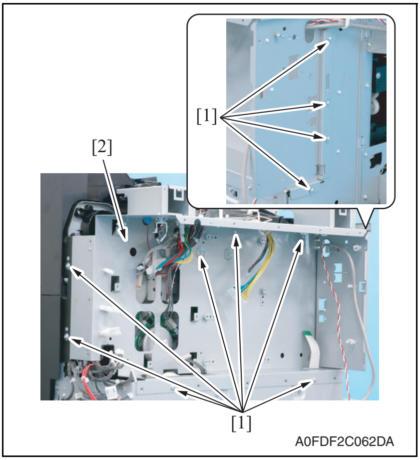
A0FDF2C060DA

17. Retract the harnesses from the wire saddles, edge cover, and related parts.



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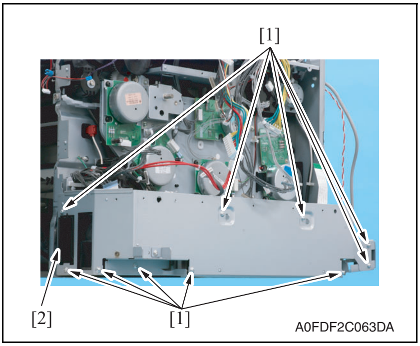
18. Disconnect three connectors [1].



19. Remove eleven screws [1], and remove the PWB box [2].

7.3.23 PWB box lower cover

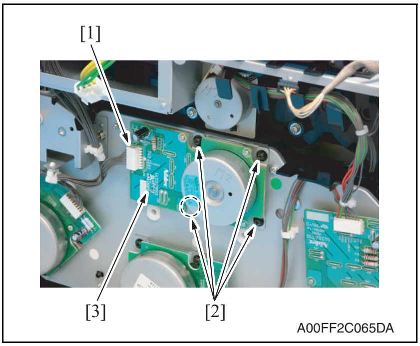
1. Remove the PWB box
See P.90



2. Remove ten screws [1], and remove the PWB box lower cover [2].

7.3.24 Color PC drum motor (M2)

1. Remove the PWB box.
See P.90



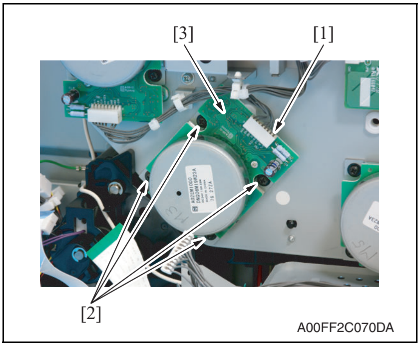
2. Disconnect the connector [1] and remove four screws [2], and the color PC drum motor [3].

NOTE

- **When installing the color PC drum motor, try to insert it straight, and take care not to damage the gears.**

7.3.25 Transport motor (M3)

1. Remove the PWB box.
See P.90



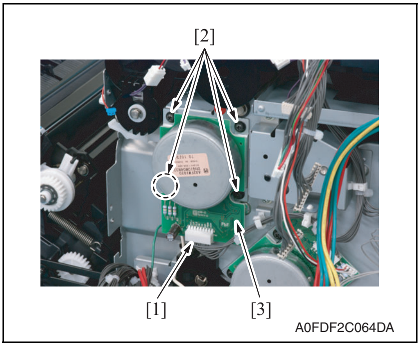
2. Disconnect the connector [1] and remove four screws [2], and remove the transport motor [3].

NOTE

- **When installing the transport motor, try to insert it straight, and take care not to damage the gears.**

7.3.26 Fusing motor (M4)

1. Remove the PWB box.
See P.90



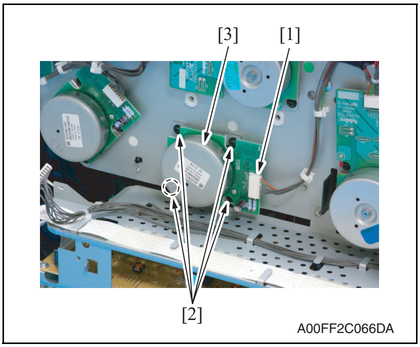
2. Disconnect the connector [1] and remove four screws [2], and remove the fusing motor [3].

NOTE

- **When installing the fusing motor, try to insert it straight, and take care not to damage the gears.**

7.3.27 K Developing motor (M5)

1. Remove the PWB box.
See P.90



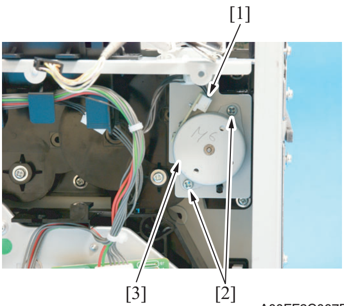
2. Disconnect the connector [1] and remove four screws [2], and remove the K developing motor [3].

NOTE

- **When installing the K developing motor, try to insert it straight, and take care not to damage the gears.**

7.3.28 Toner supply motor/Y, M (M6)

1. Remove the PWB.
   See P.90



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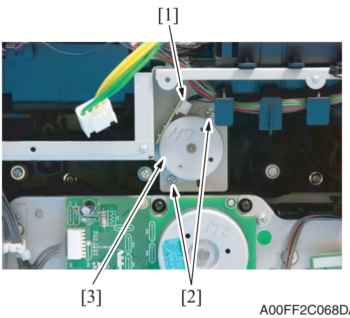
2. Disconnect the connector [1] and remove two screws [2], and remove the toner supply motor/Y, M [3].

NOTE

- **When installing the toner supply motor/Y, M, try to insert it straight, and take care not to damage the gears.**

7.3.29 Toner supply motor/C, K (M7)

1. Remove the PWB box.
   See P.90



A00FF2C068DA

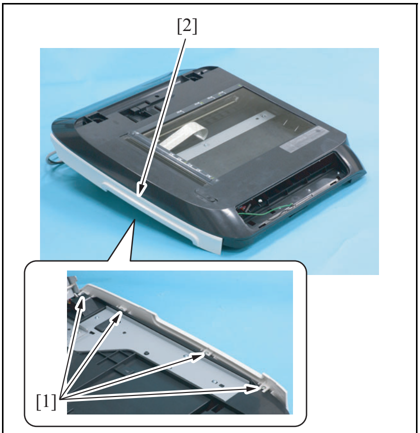
2. Disconnect the connector [1] and remove two screws [2], and the toner supply motor/C, K [3].

NOTE

- **When installing the toner supply motor/C, K, try to insert it straight, and take care not to damage the gears.**

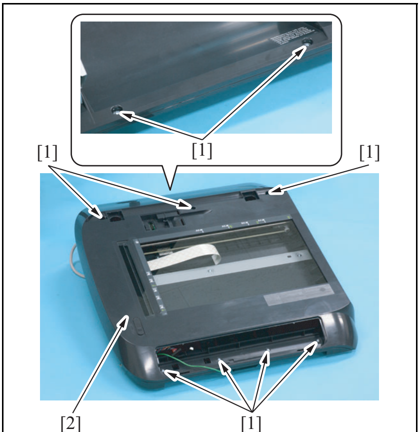
7.3.30 Scanner motor (M100)

1. Remove the operation board.
   See P.61
2. Remove the scanner unit.
   See P.86



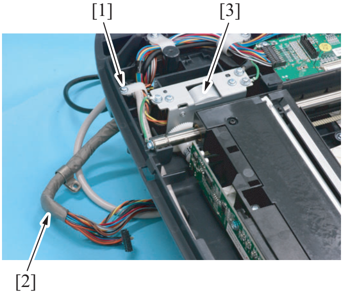
A0FDF2C048DA

3. Loosen four screws [1], and remove the scanner left cover [2].



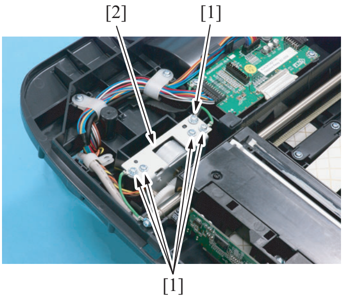
A0FDF2C049DA

4. Remove nine screws [1], and remove the original grass assy [2].



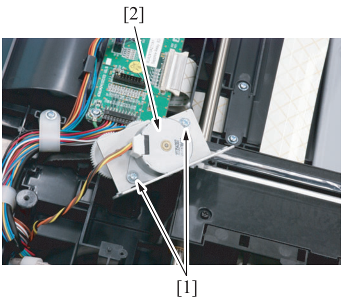
A0FDF2C065DA

5. Remove the screw [1].
6. Peel off the wire shield [2] and remove the harness of the scanner motor [3].



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7. Remove five screws [1], and remove the scanner motor assy [2].

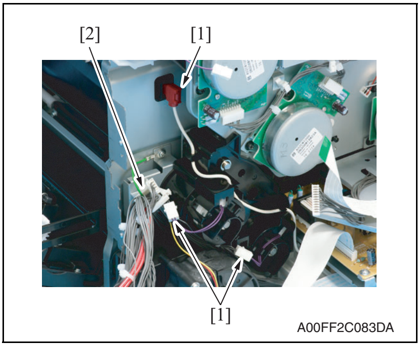


A0FDF2C067DA

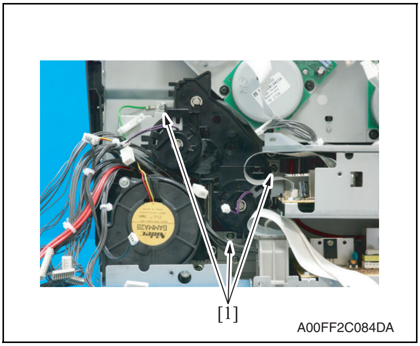
8. Remove two screws [1], and remove the scanner motor [2].

7.3.31 Media feed clutch assy

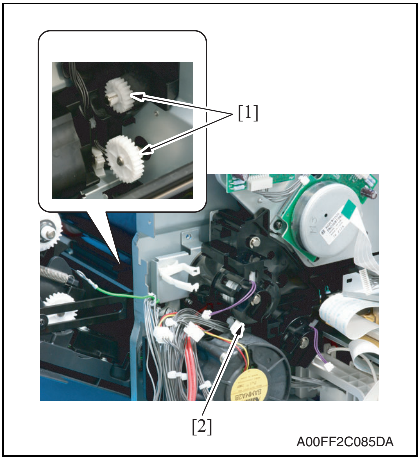
1. Remove the PWB box.
   See P.90
2. Remove the PWB box lower cover.
   See P.94



3. Disconnect three connectors [1], remove the wire saddle [2].



4. Remove three screws [1].



5. Remove two gears [1].

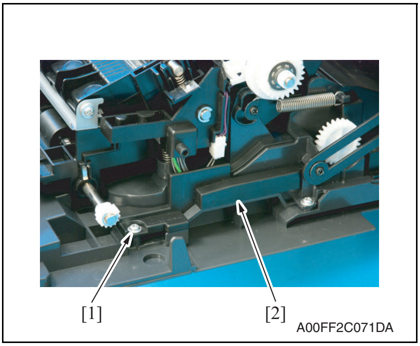
NOTE

- **When the media feed clutch/1 is reinstalled, replace the gears that have been removed, as these gears could have been damaged.**

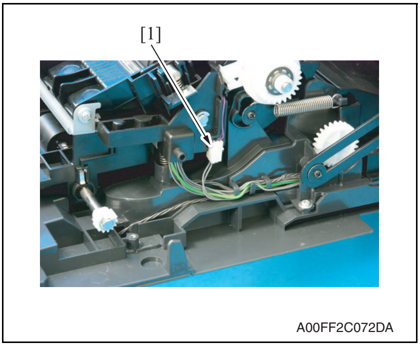
6. Remove the media feed clutch assy [2].

7.3.32 Registration roller clutch (CL3)

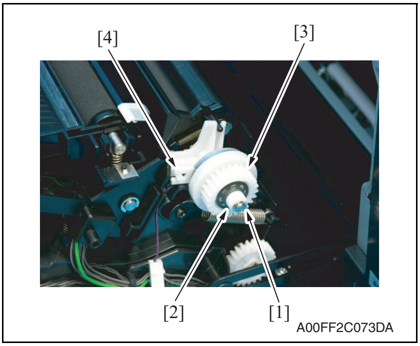
1. Open the right door.



2. Remove the screw [1], and remove the cover [2].



3. Disconnect the connector [1].



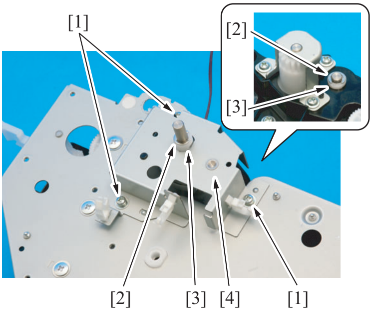
4. Remove the E-ring [1] and the bearing [2], and remove the registration roller clutch [3]

Precautions for reinstallation

- **When reinstalling the bearing, make sure that the notch [4] on the registration roller clutch comes to the position shown in the left picture.**

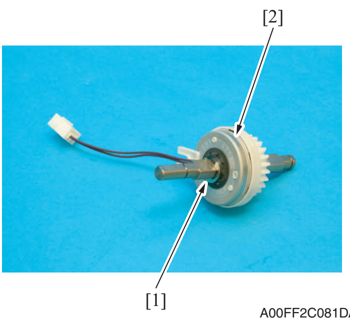
7.3.33 1st image transfer pressure/retraction clutch (CL4)

1. Remove the driving unit assy.
   See P.85



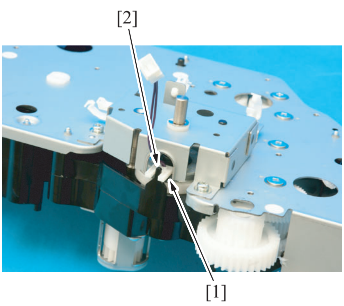
A00FF2C080DA

2. Remove three screws [1], remove two E-rings [2], and remove two bearings [3].
3. Remove the 1st image transfer pressure/retraction clutch assy [4].



A00FF2C081DA

4. Remove the E-ring [1], and remove the 1st image transfer pressure/ retraction clutch [2].



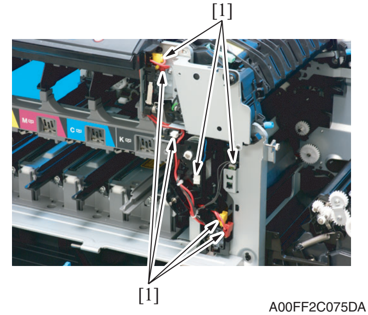
A00FF2C082DA

NOTE

- **When reinstalling the shaft and the 1st image transfer pressure/retraction clutch, make sure that the protrusion [1] on the 1st image transfer pressure/retraction clutch fits into the locking slot [2].**

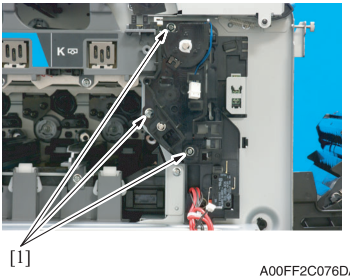
7.3.34 2nd image transfer pressure/retraction clutch (CL5)

1. Remove the right front cover.
   See P.60
2. Open the right door.



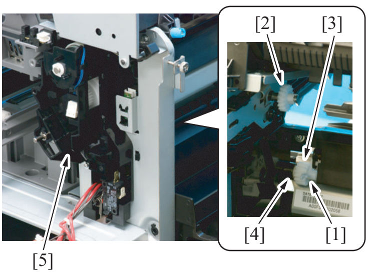
A00FF2C075DA

3. Disconnect seven connectors [1], and move the harness away from the work area.



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4. Remove three screws [1].

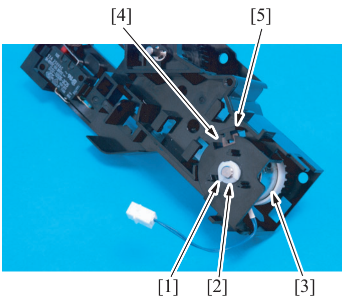


A00FF2C077DA

5. Remove the lever [1], gear/1 [2], gear/2 [3], and the bearing [4].
6. Remove the 2nd image transfer pressure/retraction drive assy [5].

NOTE

- **When the media feed clutch/1 is reinstalled, replace the gears that have been removed, as these gears could have been damaged.**



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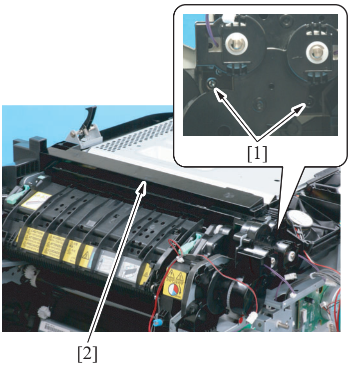
7. Remove the C-clip [1] and remove the bearing [2].
8. Remove the pressure/retraction clutch/2 [3].

Precautions for reinstallation

- **When reinstalling the bearing and pressure/retraction clutch/2, make sure that the protrusion [4] on the pressure/retraction clutch/2 fits into the locking slot [5].**

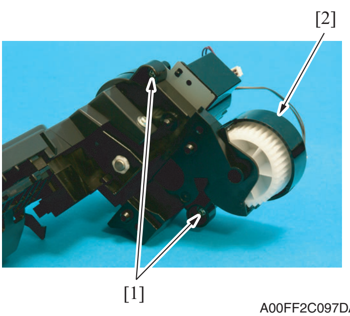
7.3.35 Switchback roller feed clutch (CL11)

1. Remove the PWB box.
See P.90



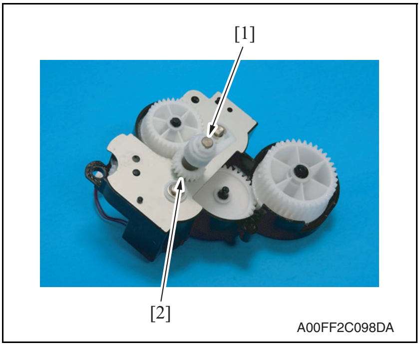
A0FDF2C068DA

2. Remove two screws [1], and remove the switchback roller clutch unit [2].

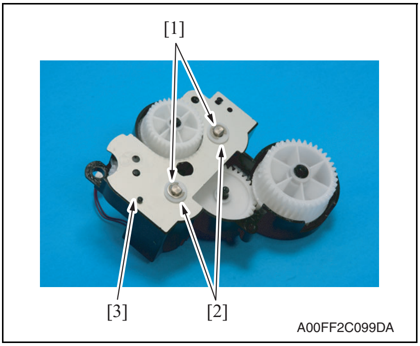


A00FF2C097DA

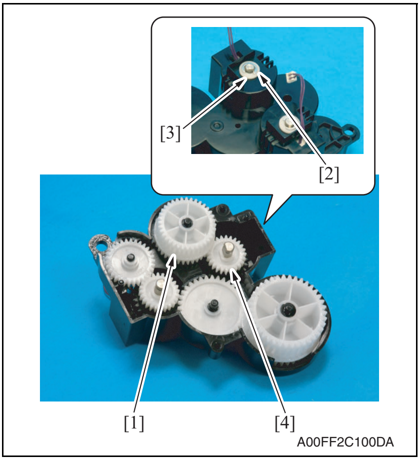
3. Remove two screws [1], and remove the switchback clutch assy [2].



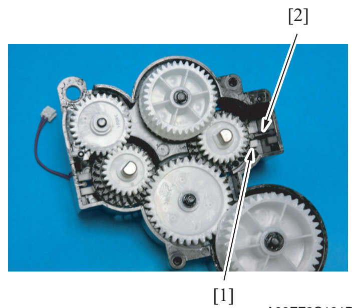
4. Remove the gear assy [1] and the bearing [2].



5. Remove two E-rings [1], and remove two bearings [2].
6. Remove the metal plate [3].



7. Remove the gear [1], E-ring [2], and bearing [3].
8. Remove the switchback roller feed clutch [4].



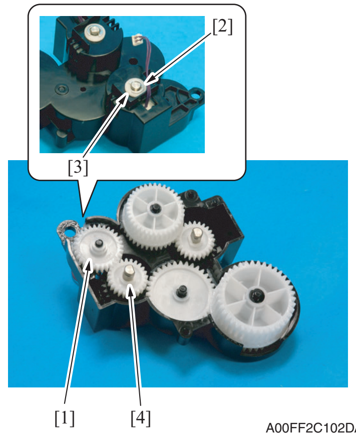
A00FF2C101DA

Precautions for reinstallation

- **When reinstalling the bearing and switchback roller feed clutch, make sure that the protrusion [1] on the duplex exit roller feed clutch fits into the locking slot [2].**

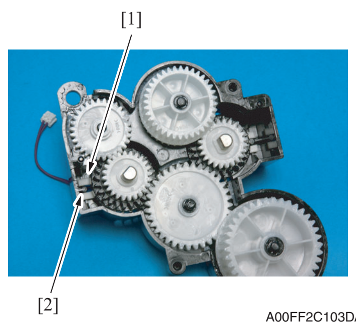
7.3.36 Switchback roller reverse clutch (CL12)

1. Remove the print control board.
   See P.66
2. Remove the switchback roller clutch unit.
   See the steps 1 to 6 on P.103 “Switchback roller feed clutch”.



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3. Remove the gear [1].
4. Remove the E-ring [2] and the bearing [3], and remove the switchback roller reverse clutch [4].



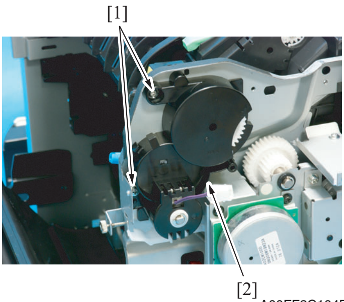
A00FF2C103DA

Precautions for reinstallation

- **When reinstalling the bearing and duplex exit roller switch back clutch, make sure that the protrusion [1] on the switchback roller reverse clutch fits into the locking slot [2].**

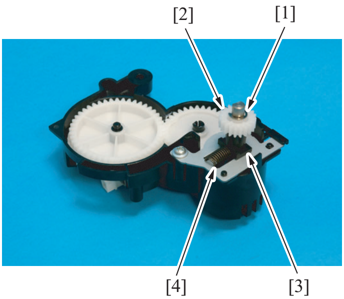
7.3.37 Duplex transport roller clutch (CL13)

1. Remove the print control board.
   See P.66
2. Remove the duplex exit roller clutch unit.
   See the steps 1 to 2 on P.103 “Duplex exit roller feed clutch”.



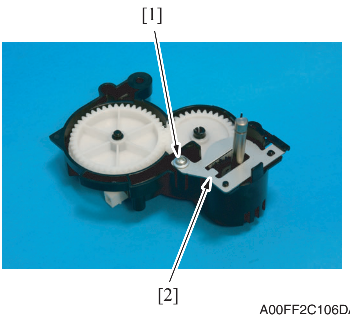
A00FF2C104DA

3. Remove two screws [1], remove the duplex transport roller clutch [2].



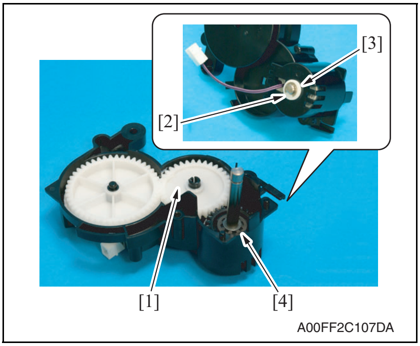
A00FF2C105DA

4. Remove the E-ring [1], gear [2], bearing [3], and spring [4].

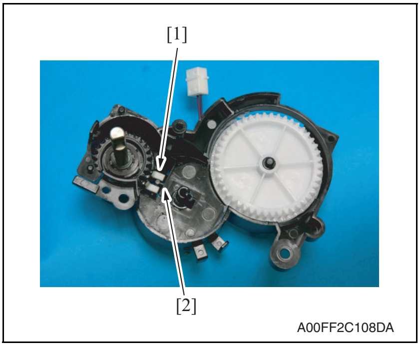


A00FF2C106DA

5. Remove the screw [1], and remove the metal plate [2].



6. Remove the gear [1].
7. Remove the E-ring [2] and bearing [3], and remove the duplex transport roller clutch [4].

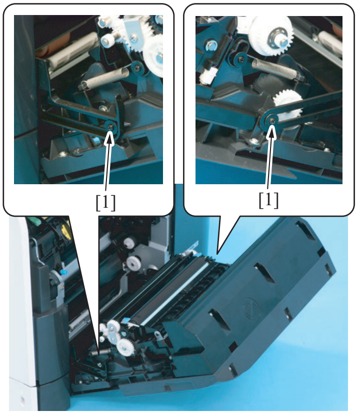


Precautions for reinstallation

- **When reinstalling the bearing and duplex transport roller clutch, make sure that the protrusion [1] on the duplex transport roller clutch fits into the locking slot [2].**

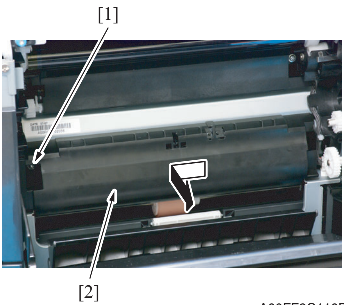
7.3.38 Temperature/ humidity sensor (TEM/HUMS)

1. Open the right door.



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2. Remove two screws [1], and swing the right door [2] all the way down.

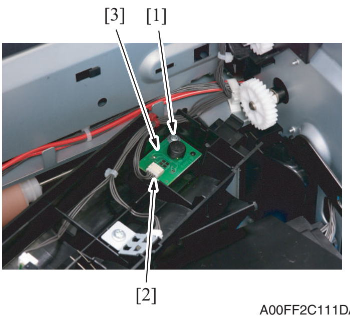


A00FF2C110DA

3. Remove the screw [1] from the sensor holder [2].
4. Remove the sensor holder [2] as shown on the left.

NOTE

- **Do not jerk off the sensor holder, to which a harness is connected.**

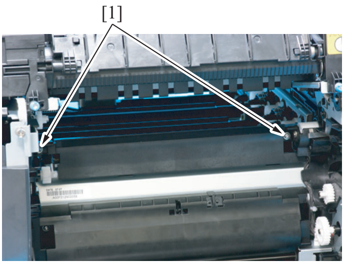


A00FF2C111DA

5. Disconnect the connector [1], and remove the screw [2], and temperature/ humidity sensor [3].

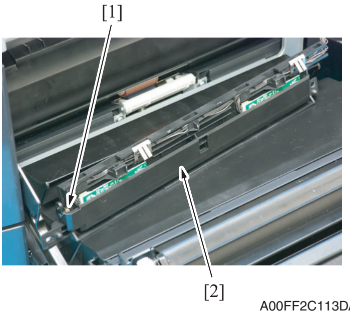
7.3.39 IDC sensor board/Re, IDC sensor board/Fr (IDCSB/R, IDCSB/L)

1. Open the right door.
2. Remove the transfer belt.
   See P.23



A00FF2C112DA

3. Remove two screws [1].

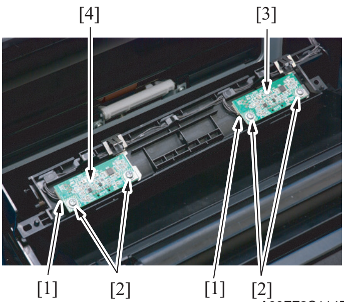


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4. Unhook the spring [1] and remove the cover [2].

NOTE

- **Be careful not to lose the spring.**

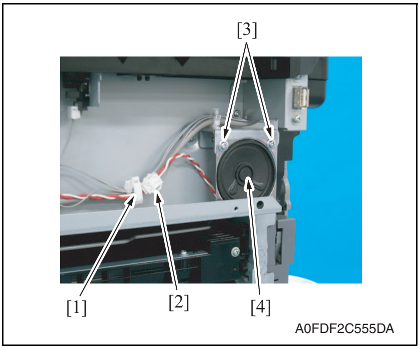


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5. Disconnect the connector [1] each, and remove two screws [2] each.
6. Remove the IDC sensor board/Re [3] and IDC sensor board/Fr [4].

7.3.40 Speaker (SP1)

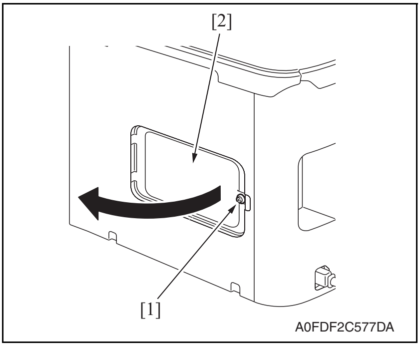
1. Remove the left cover.
   See P.61



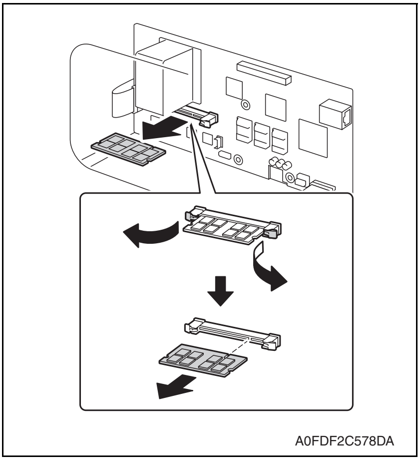
2. Remove the wire saddle [1], and disconnect the connector [2].
3. Remove two screws [3], and remove the speaker [4].

7.3.41 Memory (DIMM)

1. Remove the rear cover.
   See P.62



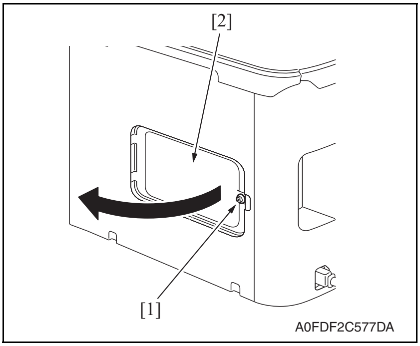
2. Loosen the screw [1], and open the inside cover [2].



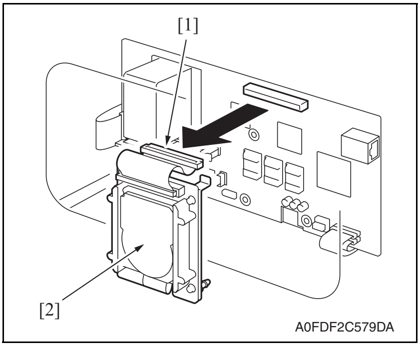
3. Remove the memory (DIMM) as illustrated.

7.3.42 Hard disk

1. Remove the rear cover.
   See P.62



2. Loosen the screw [1], and open the inside cover [2].



3. Disconnect the connector cable [1], and remove the hard disk [2].

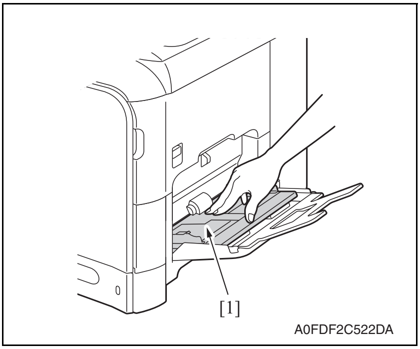
7.4 Cleaning procedure

NOTE

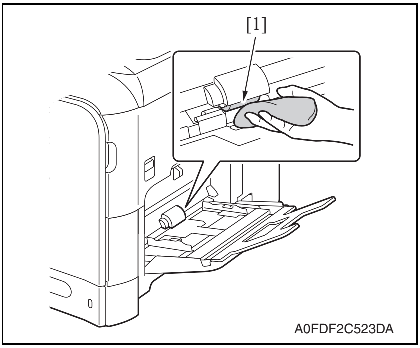
- **The alcohol described in the cleaning procedure represents the isopropyl alcohol.**

7.4.1 Tray 1 feed roller

1. Open the tray 1.



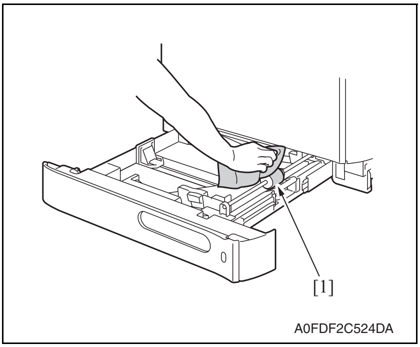
2. Press down on the center of the media lifting plate [1] until the left and right locking tabs lock into place.



3. Using a cleaning pad dampened with alcohol, wipe the feed roller [1] clean of dirt.

7.4.2 Tray 2 feed roller

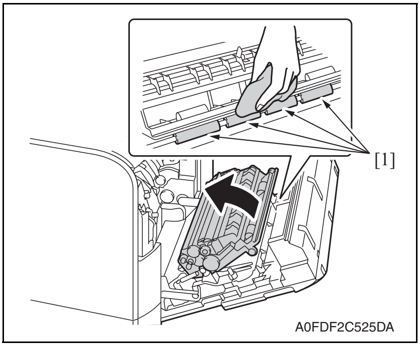
1. Slide out tray 2.



2. Using a cleaning pad dampened with alcohol, wipe the feed roller [1] clean of dirt.

7.4.3 Vertical transport roller

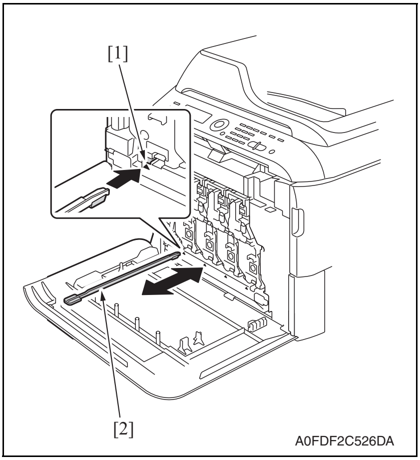
1. Open the right door.



2. Using a cleaning pad dampened with alcohol, wipe the vertical transport roller [1] clean of dirt.

7.4.4 Laser irradiation section

1. Open the front cover.



2. Align the edge of the laser lens cleaning tool [2] with the marker [1] (at four places) of the waste toner bottle. Insert the tool [2] and make two to three reciprocating motions to clean the laser irradiation section.

NOTE

- **For cleaning, do not use any tool other than the specified laser lens cleaning tool.**

Blank Page

Adjustment/Setting

8. How to use the adjustment section

- “Adjustment/Setting” contains detailed information on the adjustment items and procedures for this machine.
- Throughout this “Adjustment/Setting,” the default settings are indicated by “ ”.

Advance checks
Before attempting to solve the customer problem, the following advance checks must be made. Check to see if:

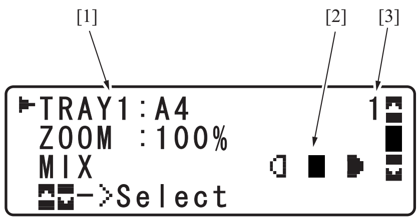
- The power supply voltage meets the specifications.
- The power supply is properly grounded.
- The machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that generate electric noise).
- The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
- The original has a problem that may cause a defective image.
- The density is properly selected.
- The original glass, slit glass, or related part is dirty.
- Correct media is being used for printing.
- The units, parts, and supplies used for printing (developer, PC drum, etc.) are properly replenished and replaced when they reach the end of their useful service life.
- Toner is not running out.

⚠ **CAUTION**
- **Be sure to unplug the power cord of the machine before starting the service job procedures.**
- **If it is unavoidably necessary to service the machine with its power turned ON, use utmost care not to be caught in the scanner cables or gears of the exposure unit.**
- **Special care should be used when handling the fusing unit which can be extremely hot.**
- **The developing unit has a strong magnetic field. Keep watches and measuring instruments away from it.**
- **Take care not to damage the PC drum with a tool or similar device.**
- **Do not touch IC pins with bare hands.**

9. Description of the control panel

9.1 Control panel display

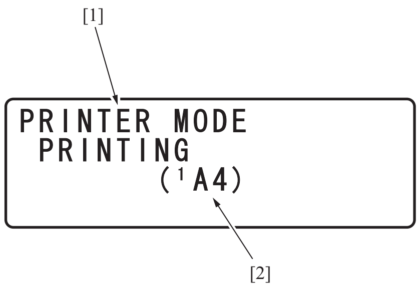
9.1.1 Main screen



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No.	Name	Description
[1]	Status	Allows the current settings to be checked and the various settings to be changed. Depending on the situation, the machine status or an error message may appear in the fourth line.
[2]	Copy density	Displays the copy density currently set.
[3]	Number of copies	Displays the number of copies currently set to be made.

9.1.2 Print screen

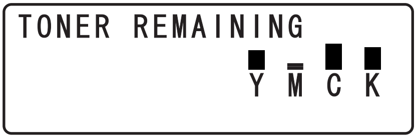


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No.	Name	Description
[1]	Status	Displays messages indicating operations such as printing.
[2]	Media tray/media size	Indicates the media tray and media size that is selected.

9.1.3 Toner supply screen

- With the main screen displayed, press the ◀ key to display the [TONER REMAINING] screen.
- Pressing the Back key will cause the main screen to reappear.



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10. REPORT/STATUS mode

10.1 REPORT/STATUS mode function tree

REPORT/STATUS mode		Ref. page
TOTAL PRINT	TOTAL PRINT	P.119
	MONO COPY	P.119
	COLOR COPY	P.119
	MONO PRINT	P.119
	COLOR PRINT	P.119
	FAX PRINT	P.119
	TOTAL SCAN	P.119
SUPPLY STATUS	C TONER	P.120
	M TONER	P.120
	Y TONER	P.120
	K TONER	P.120
	C I-UNIT	P.120
	M I-UNIT	P.120
	Y I-UNIT	P.120
	K I-UNIT	P.120
TX/RX RESULT		P.121
REPORT	TX RESULT REPORT	P.121
	RX RESULT REPORT	P.121
	ACTIVITY REPORT	P.121
	MEMORY DATA LIST	P.121
	MEMORY IMAGE PRINT	P.121
	FAVORITE LIST	P.121
	SPEED DIAL LIST	P.122
	GROUP DIAL LIST	P.122
	UTILITY MAP	P.122
	PS/PCL MENU MAP	P.122
	CONFIGURATION PAGE	P.122
	PS FONT LIST	P.126
	PCL FONT LIST	P.126
	DIRECTORY LIST	P.126

10.2 TOTAL PRINT

- The total number of pages for each of the following can be checked.

10.2.1 TOTAL PRINT

Function	• This counter shows the total number of pages printed.
Use	

10.2.2 MONO COPY

Function	• This counter shows the total number of pages copied in black-and-white.
Use	

10.2.3 COLOR COPY

Function	• This counter shows the total number of pages copied in color.
Use	

10.2.4 MONO PRINT

Function	• This counter shows the total number of pages printed in black-and-white.
Use	

10.2.5 COLOR PRINT

Function	• This counter shows the total number of pages printed in color.
Use	

10.2.6 FAX PRINT

Function	• This counter shows the total number of pages that were faxed.
Use	

10.2.7 TOTAL SCAN

Function	• This counter shows the total number of document pages that were scanned.
Use	

10.3 SUPPLY STATUS

- The remaining amount of toner in the toner cartridges and the remaining service life of the imaging units can be displayed as a percentage.

10.3.1 C TONER

Function Use	• Displays the remaining amount of toner in the cyan (C) toner cartridge as a percentage.

10.3.2 M TONER

Function Use	• Displays the remaining amount of toner in the magenta (M) toner cartridge as a percentage.

10.3.3 Y TONER

Function Use	• Displays the remaining amount of toner in the yellow (Y) toner cartridge as a percentage.

10.3.4 K TONER

Function Use	• Displays the remaining amount of toner in the black (K) toner cartridge as a percentage.

10.3.5 C I-UNIT

Function Use	• Displays the remaining service life of the cyan (C) imaging unit as a percentage.

10.3.6 M I-UNIT

Function Use	• Displays the remaining service life of the magenta (M) imaging unit as a percentage.

10.3.7 Y I-UNIT

Function Use	• Displays the remaining service life of the yellow (Y) imaging unit as a percentage.

10.3.8 K I-UNIT

Function Use	• Displays the remaining service life of the black (K) imaging unit as a percentage.

10.4 TX/RX RESULT

Function	• The results of a maximum of 60 fax transmissions/receptions can be viewed.
Use	• When the Start key is pressed, details of the report displayed in the message window can be printed.

10.5 REPORT

- The machine settings, lists and reports related to fax can be printed.

1. Press the ▲ and ▼ key to select [REPORT/STATUS], and then press the Select key.
2. Select [REPORT], and press the Select key.
3. Press the ▲ and ▼ key to select the desired report, press the Select key, and then Start key.
   The report is printed

10.5.1 TX RESULT REPORT

Function Use	• The [SESSION], [FUNCTION], [NO.], [DESTINATION STATION], [DATE], [TIME], [PAGE], [DURATION], [MODE], and [RESULT] are printed.

10.5.2 RX RESULT REPORT

Function Use	• The [SESSION], [FUNCTION], [NO.], [DESTINATION STATION], [DATE], [TIME], [PAGE], [DURATION], [MODE], and [RESULT] are printed.

10.5.3 ACTIVITY REPORT

Function Use	• The [NO.], [SESSION], [DATE], [TIME], [TX/RX], [DESTINATION STATION], [PAGE], [DURATION], [MODE], and [RESULT] are printed.

10.5.4 MEMORY DATA LIST

Function Use	• This is a list of documents waiting to be sent, and documents specified for timer transmission. The [SESSION], [FUNCTION], [TIME], [NO.], [DESTINATION STATION], and [PAGE] are printed.

10.5.5 MEMORY IMAGE PRINT

Function Use	• A reduced image of the first page of the document waiting to be sent in addition to the [SESSION], [FUNCTION], [NO.], [DESTINATION STATION], [DATE], [TIME], and [PAGE] are printed.

10.5.6 FAVORITE LIST

Function Use	• The destinations registered in the favorite list are printed in the order that they appear in the favorite list.

10.5.7 SPEED DIAL LIST

Function	• The recipients programmed for the speed dial numbers are printed in numerical order.
Use	

10.5.8 GROUP DIAL LIST

Function	• The group dialing settings specified for one-touch dial keys are printed in numerical order of the keys.
Use	

10.5.9 UTILITY MAP

Function	• Prints the current machine setting.
Use	

10.5.10 PS/PCL MENU MAP

Function	• Prints PS/PCL PRINT menu and its settings.
Use	

10.5.11 CONFIGURATION PAGE

Function	• Prints the current machine configuration.
Use	It is used to confirm the following settings. • Supplies Status • Coverage Information • Counter • Paper • Machine Setting • Network Setting • Firmware Version • Options • PM Parts Information • Fax Setting • Fax Maintenance

A. Sample of Configuration Page

```
                                                           Product Name:KONICA MINOLTA bizhub C20

                                              Configuration Page
 DATE:24.JAN.2006 03:59
- Supplies Status -             Status          Remaining %               Cartridge Type

  Toner Cartridge Cyan          Empty              0%                     Standard
  Toner Cartridge Magenta       Near Empty         4%                     Standard
  Toner Cartridge Yellow        Ready             88%                     High
  Toner Cartridge Black         Ready             90%                     Starter
  Image Unit Cyan               Empty              0%
  Image Unit Magenta            Near Empty         4%
  Image Unit Yellow             Ready             88%
  Image Unit Black              Ready             90%
  Waste Toner Bottle            Ready


- Coverage Information -    Normalization:All sizes converted to A4 equivalent.
  Normalized Total Faces Counter          Normalized Coverage Information
     Color Faces Printed        xxxxxx       Color Average %   xxxxxx     Monochrome Average % xxxxxx
     Monochrome Faces Printed   xxxxxx
     Total                      xxxxxx    Normalized Coverage Information
                                          <Color Faces>       <Current Toner Cartridge>  <Last Job>
  Normalized Total Faces Coverage            Copy    xxxxxx       Average % C  xxxxxx       Average % C  xxxxxx
     Copy               xxxx                 Printer xxxxxx       Average % M  xxxxxx       Average % M  xxxxxx
     Printer            xxxx              <Monochrome Faces>      Average % Y  xxxxxx       Average % Y  xxxxxx
                                             Copy    xxxxxx       Average % K  xxxxxx       Average % K  xxxxxx
                                             Fax     xxxxxx

- Counter -
  Total Faces Counter:       xxxxxx  Total Duplex Counter:    xxxxxx     Fax Counter
    Color Faces Counter                Color Sheets Counter                TX Counter           xxxxxx
      Copy                   xxxxxx      Copy                 xxxxxx       RX Counter           xxxxxx
      Printer                xxxxxx      Printer              xxxxxx     Scan Counter           xxxxxx
    Monochrome Faces Counter           Monochrome Sheets Counter         Sheets Printed by Paper tray
      Copy                   xxxxxx      Copy                 xxxxxx       Tray1                xxxxxx
      Printer                xxxxxx      Printer              xxxxxx       Tray2                xxxxxx
      Fax                    xxxxxx                                        Tray3                xxxxxx

- Paper-
  Sheets Printed by Paper Size                    Sheets Printed by Paper Type
    A4                       xxxxxx                 Plain Paper      xxxxxx         Envelop         xxxxxx
    B5(JIS)                  xxxxxx                 Recycled         xxxxxx         Letterhead      xxxxxx
    A5                       xxxxxx                 Thick            xxxxxx         Postcard        xxxxxx
    Legal                    xxxxxx                 Thick2           xxxxxx         Label           xxxxxx
    Letter                   xxxxxx                 Glossy           xxxxxx         Transparency    xxxxxx
    Others                   xxxxxx                 Glossy2          xxxxxx

- Machine Setting -                              - Network Setting -
    Serial Number            xxxxxxxx               Network Interface  Ethernet 10Base T/100Base TX
    Auto Panel Reset(min)      1                    Host Name          MC4690768213
    Energy Save Mode(min)      15                   Bonjour Discovery  ENABLE
    Language                 ENGLISH                DHCP               ENABLE
    Lamp Off Time            MODE 1                 BOOTP              DISABLE
    Auto Continue            ON                     HTTP               ENBALE
    Tray Chaining            ON                     SNMP               EMABLE
    Toner Empty              STOP                   IP Address         172. 18. 17.251
                                                    Subnet Mask        255.255.255.0
- Firmware Version -                                Gateway Address    172.16.0.1
    Engine                   A00F-50F0-0302-00      MAC Address        00:20:6B:76:82:13
    Boot Code                2007/07/16 V0.03
    CC Controlled            V1.1
    PP Controlled            0.2                 - Fax Setting -
                                                    Fax Number          xxxxxxxxxxxxxxxxxxxx
- Options -                                         Tone/Pulse          Tone
    Tray3                    Not Installed          No. Of Rings        2
    Duplex                   Installed              Header              ON
    ADF                      Installed              Def.Res             STANDARD
    Memory(Copy+Printer)     256Mb+512Mb            Def.Bright          0
    Hard Disk                1024MB                 Line Monitor        LOW
    Card                     Not Installed          Def.Tx Report       ON
                                                    Def.Rx Report       OFF
- PM Parts Information -     Remaining %            Footer              OFF
    Transfer Belt Unit        50%
    Transfer Roller           78%                - Fax Maintenance -
    Fuser Unit                78%                   TX Speed            33.6 kbps
                                                    RX Speed            33.6 kbps
                                                    TX Level            -9 dBm
                                                    RX Level            -43 dBm
                                                    DTMF Level          -9 dBm
                                                    CNG Level           -11 dBm
                                                    CED Level           -11 dBm
                                                    ECM Mode            ON
                                                    Coding scheme       JBIG
                                                    Toner Empty Report  OFF
                                                    Protocol            OFF

 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/    8B01
 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0/ 0
```

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B. Supplies Status

- Display the estimated percent of life remaining in the toner cartridge and print unit.
  The type of the toner cartridges that are installed in the printer is also displayed (See the table below).

Types of toner cartridges	
Starter	Standard-capacity toner cartridge: 4.0 K
High	High-capacity toner cartridge: 8.0 K

NOTE

- **The percent of life remaining in the toner cartridge or print unit can be used as a guide, but may not exactly reflect the amount that has been used in the toner cartridge or print unit.**

C. Coverage Information

- The total number of pages that have been printed is counted and displayed based on the description shown in the following table.

Types of count	Count condition
Color Faces Printed	• Counts by converting the size outputted in color to a value corresponding to A4 pages. 1-sided (A4): Counts +1; 2-sided (A4): Counts +2
Monochrome Faces Printed	• Counts by converting the size outputted in monochrome to a value corresponding to A4 pages. 1-sided (A4): Counts +1; 2-sided (A4): Counts +2
Total	• Total count of the above printed pages in color and monochrome

D. PM parts information

- The lower right part of the configuration page shows numerical values that represent consumable/periodic replacement parts (units) counter information.
  The table below explains counter information that is provided by each numerical data.

(1) Display on the configuration page

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Display	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/

No.	25
Display	8B01/

No.	26	27	28	29	30	31	32	33	34	35	36	37
Display	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/

(2) Meaning of counter value

No.		Contents
1	Replace	Number of times a High-capacity toner cartridge (K) has been replaced
2		Number of times a Standard-capacity toner cartridge (K) has been replaced
3		Number of times a Non-genuin toner cartridge (K) has been replaced
4		Number of times a High-capacity toner cartridge (C) has been replaced
5		Number of times a Standard-capacity toner cartridge (C) has been replaced
6		Number of times a Non-genuin toner cartridge (C) has been replaced
7		Number of times a High-capacity toner cartridge (M) has been replaced

No.		Contents
8	Replace	Number of times a Standard-capacity toner cartridge (M) has been replaced
9		Number of times a Non-genuin toner cartridge (M) has been replaced
10		Number of times a High-capacity toner cartridge (Y) has been replaced
11		Number of times a Standard-capacity toner cartridge (Y) has been replaced
12		Number of times a Non-genuin toner cartridge (Y) has been replaced
13		If Non-genuine TC was used, value is 1. (default is 0)
14		If Refill TC was used, value is 1. (default is 0)
15		Rate of transfer roller remaining (%)
16		Number of times a transfer roller has been replaced
17		Rate of transfer belt unit remaining (%)
18		Number of times a transfer belt unit has been replaced
19		Rate of fusing unit remaining (%)
20		Number of times a fusing unit has been replaced
21		Number of times a imaging unit (K) has been replaced
22		Number of times a imaging unit (C) has been replaced
23		Number of times a imaging unit (M) has been replaced
24		Number of times a imaging unit (Y) has been replaced
25	Machine setting date	Year (e.g. The year 2008 is displayed as 8.)
		Month (e.g. January is displayed as A. February is B. March is C. and December is L.)
		Day (e.g. The day 1 is displayed as 01.)
26	Application counter	Copy print
27		Fax Reception print
28		Report output print
29		PC Print
30		Fax Transmitting pages
31		Scan to E-mail
32		Scan to FTP
33		Scan to SMB
34		Scan to USB
35		Twain
36		PictBridge
37		USB to Printing

10.5.12 PS FONT LIST

Function	• Prints the PostScript font list.
Use	

10.5.13 PCL FONT LIST

Function	• Prints the PCL font list.
Use	

10.5.14 DIRECTORY LIST

Function	• Prints the directory list of the hard disk or a CompactFlash card.
Use	

11. UTILITY mode

11.1 UTILITY mode function tree

- A menu is display by select [UTILITY] item on the standby mode.

UTILITY mode				Ref. page
MACHINE SETTING	AUTO PANEL RESET			P.131
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	ENERGY SAVE MODE			P.131
	LCD CONTRAST			P.131
	KEY SPEED	TIME TO START		P.131
		INTERVAL		P.132
	LANGUAGE			P.132
	LAMP OFF TIME			P.132
	LAMP WARMUP TIME			P.132
	BUZZER VOLUME			P.132
	INITIAL MODE			P.133
	TONER EMPTY			P.133
	TONER NEAR EMPTY			P.133
	I-UNIT NEAR EMPTY			P.133
	AUTO CONTINUE			P.133
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PAPER SETUP	TRAY1 PAPER	PLAIN PAPER		P.135
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			SUBNET MASK	P.137
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		DNS	DNS AUTO SETTING	P.137
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UTILITY mode				Ref. page
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		SMTP SERVER ADDR.		P.143
		SMTP PORT NO.		P.143
		SMTP TIMEOUT		P.143
		TEXT INSERT		P.143
		POP BEFORE SMTP	DISABLE/ ENABLE	P.143
			POP3 SERVER ADDR.	P.144
			POP3 PORT NO.	P.144

UTILITY mode				Ref. page
			POP3 TIMEOUT	P.144
			POP3 ACCOUNT	P.144
			POP3 PASS-WORD	P.144
		SMTP AUTH.	DISABLE/ ENABLE	P.145
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		SEARCH BASE		P.146
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UTILITY mode			Ref. page
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	PAPER SIZE		P.164
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11.2 MACHINE SETTING

11.2.1 AUTO PANEL RESET

Function	• Sets the period of time after which the initial screen reappears after the last print job is received or the last panel key is operated.
Use	• To set the period of time by executing auto panel reset.
Setting/ procedure	• The default setting is 1min. OFF 30sec "1min" 2min 3min 4min 5min

11.2.2 PREHEAT MODE

Function Use	• To specify the time until the machine enters preheat mode after a copy cycle has been completed or after the last key operation.
Setting/ procedure	• The default setting is 15 min. 1 to 120 min

11.2.3 ENERGY SAVE MODE

Function Use	• To specify the time until the machine enters energy save mode after a copy cycle has been completed or after the last key operation.
Setting/ procedure	• The default setting is 30 min. 6 to 120 min **NOTE** • **Valid only when [ENERGY SAVE MODE] of FAX MAINTENANCE or [ENERGY SAVE MODE] of SERVICE MODE is set to [ON]**

11.2.4 LCD CONTRAST

Function	• Sets the brightness of the LCD display.
Use	• To set the brightness of the LCD display.
Setting/ procedure	• The default setting is ◁□■□□▶ . LIGHT -1 "0" +1 +2 DARK

11.2.5 KEY SPEED

A. TIME TO START

Function Use	• To specify the length of time until the cursor begins to move continuously when a key is held down.
Setting/ procedure	• The default setting is 1.0sec. 0.1sec 0.3sec 0.5sec "1.0sec" 1.5sec 2.0sec 2.5sec 3.0sec

B. INTERVAL

Function Use	• To specify the length of time until the cursor continuously moves between settings or characters.
Setting/ procedure	• The default setting is 0.1sec. "0.1sec" 0.3sec 0.5sec 1.0sec 1.5sec 2.0sec 2.5sec 3.0sec

11.2.6 LANGUAGE

Function	• Sets the language of the control panel display.
Use	• To change the language of the control panel display.
Setting/ procedure	• The default setting is ENGLISH. "ENGLISH" FRENCH GERMAN ITALIAN SPANISH PORTUGUESE RUSSIAN CZECH SLOVAK HUNGARIAN POLISH **NOTE** **• The default setting of language is subject to the setting of [PTT SETTING].**

11.2.7 LAMP OFF TIME

Function	• Sets the timing at which the scanner unit lamp turns OFF.
Use	• MODE1: When the machine enters preheat mode • MODE2: When the machine enters energy save mode
Setting/ procedure	• The default setting is MODE1. "MODE1" MODE2

11.2.8 LAMP WARMUP TIME

Function	• Sets the warm-up time for the lamp of the scanner unit.
Use	• If [FIX] is selected, the scanner unit can be used after the printer engine preparations are finished. • If [AUTO] is selected, the scanner unit cannot be used until the printer engine preparations are finished.
Setting/ procedure	• The default setting is FIX. AUTO "FIX"

11.2.9 BUZZER VOLUME

Function Use	• To set the volume of alarms and the beep sounded when a key is pressed.
Setting/ procedure	• The default setting is LOW. OFF "LOW" HIGH

11.2.10 INITIAL MODE

Function Use	• To set the mode (Copy mode or Fax mode) that the machine starts up in or returns to after the Control Panel is reset.
Setting/ procedure	• The default setting is COPY. "COPY" FAX

11.2.11 TONER EMPTY

Function	• Specifies whether to stop or continue printing when a toner empty condition is detected.
Use	• To permit printing upon a toner empty condition.
Setting/ procedure	• The default setting is STOP. "STOP" BW CONTINUE • If [STOP] is selected, printing, copying and faxing stop when the toner runs out. • If [BW CONTINUE] is selected, printing, copying and faxing do not stop when the toner runs out. Printing, copying, or faxing continues only if the black toner is available.

11.2.12 TONER NEAR EMPTY

Function	• To set whether to display a message when a toner near empty state is detected.
Use	• Use this setting to display a message when a toner near empty state is detected.
Setting/ procedure	• The default setting is OFF. ON "OFF"

11.2.13 I-UNIT NEAR EMPTY

Function	• To set whether to display a message when a imaging unit near empty state is detected.
Use	• Use this setting to display a message when a imaging unit near empty state is detected.
Setting/ procedure	• The default setting is OFF. ON "OFF"

11.2.14 AUTO CONTINUE

Function	• Enables or disables printing when the size of the media loaded in the tray does not match that of the print data.
Use	• To print data on the media loaded in the tray if the media loaded in the tray does not match that of the print data.
Setting/ procedure	• The default setting is OFF. ON "OFF"

11.2.15 CALIBRATION

Function	• Executes the image stabilization sequence.
Use	• To calibrate the engine when there are print image quality problems. • To calibrate the engine when the transfer belt unit and 2nd transfer roller are replaced with new ones.
Setting/ procedure	• The default setting is OFF. ON "OFF" *1.* Select [MACHINE SETTING] and then [CALIBRATION], and press the Select key. *2.* Select [ON] and press the Select key. *3.* Image stabilization is executed.

11.3 PAPER SETUP

11.3.1 TRAY1 PAPER

<table>
<tr><td>Function</td><td>• Sets the type and size of the paper loaded in tray1.</td></tr>
<tr><td>Use</td><td>• When the type and size of the paper loaded in tray1 have been changed
• The default setting varies according to the voltage of the printer.</td></tr>
<tr><td>Setting/
procedure</td><td>• The default setting is PLAIN PAPER.

“PLAIN PAPER” THICK PAPER THICK PAPER2 TRANSPARENCY
LABELS LETTERHEAD GLOSSY GLOSSY2
ENVELOPE POSTCARD

• Default setting of paper size depend on the marketing area setting.
USA and Canada: “LETTER”, Other country: “A4”

<PLAIN PAPER, LETTERHEAD>
A4, A5, B5, LEGAL, LETTER, G LETTER, STATEMENT, EXECUTIVE, FOLIO, G LEGAL, OFICIO, CUSTOM

NOTE
• [OFICIO] only display when PTT=MEXICO.
• If [CUSTOM] is selected as the paper size, specify settings for LENGTH (148 to 356 mm) and WIDTH (92 to 216 mm) separately.

<ENVELOPE>
"COM10”, C6, DL, MONARCH, CHOU #3, CUSTOM

<POSTCARD>
“J-POSTCARD 100x148”, D-POSTCARD 148x200, CUSTOM</td></tr>
</table>

11.3.2 TRAY2 PAPER

<table>
<tr><td>Function</td><td>• Sets the size of the paper loaded in tray2.
• This function becomes available only when the optional tray2 is mounted in the machine.</td></tr>
<tr><td>Use</td><td>• To set the size of paper loaded in tray2 according to that actually loaded.</td></tr>
<tr><td>Setting/
procedure</td><td>• PLAIN PAPER only
• Default setting of paper size depend on the marketing area setting.
USA and Canada: “LETTER”, Other country: “A4”

“A4” A5 B5 “LETTER”
G LETTER STATEMENT EXECUTIVE CUSTOM

NOTE
• If [CUSTOM] is selected as the paper size, specify settings for LENGTH (148 to 297 mm) and WIDTH (92 to 216 mm) separately.</td></tr>
</table>

11.4 ADMIN. MANAGEMENT

- The ADMIN. MANAGEMENT menu is accessible only by the administrator.
  To display the settings for this menu, select [ADMIN. MANAGEMENT], use the keypad to type in the 6-digit administrator access code, and then press the Select key.

11.4.1 ADMINISTRATOR NO.

Function Use	• Use to change the ADMINISTRATOR NO.
Setting/ procedure	• The default setting is 000000. 1. Select [ADMINISTRATOR NO.] and press the Select key. 2. Enter the existing 6-digit administrator number and press the Select key. 3. Enter the new 6-digit administrator number and press the Select key.

11.4.2 REMOTE MONITOR

Function Use	• Set if the phone line connection is to be enabled for Remote Setup Utility.
Setting/ procedure	• The default setting is OFF. "OFF" ON

11.4.3 NETWORK SETTING

A. TCP/IP

Function	• Enables TCP/IP
Use	• To specify that the printer is connected to a TCP/IP network. ENABLE: Print can be made at TCP/IP environment. DISABLE: Print cannot be made at TCP/IP environment.
Setting/ procedure	• The default setting is ENABLE. DISABLE "ENABLE"

B. IP ADDR. SETTING

Function	• Sets the IP address of the printer used for the network.
Use	• To set the printer's IP address.
Setting/ procedure	• The default setting is AUTO. "AUTO" SPECIFY • If AUTO is selected, the IP address is automatically acquired from the DHCP server. **NOTE** • **AUTO is only enabled if there is a DHCP server available on the network.** • **When AUTO is selected, there is no need to set the SUBNET MASK or GATEWAY setting.** • If SPECIFY is selected, the screen for entering the IP address appears.

(1) SUBNET MASK

Function	• This function is used to specify the subnet mask value for the network.
Use	**NOTE** • **Please consult customer's network administrator for information about the subnet mask to use.**
Setting/ procedure	• Setting LAN connect to WAN the net mask address. **NOTE** • **If Auto is selected for [IP ADDR. SETTING], the items of [SUBNET MASK] and [GATEWAY] are automatically set. Key entry is therefore disabled for [SUBNET MASK] and [GATEWAY].**

(2) GATEWAY

Function	• This function is used to specify the default gateway (IP address) of a router on the network.
Use	**NOTE** • **Please consult customer's network administrator for information about the gateway to use.**
Setting/ procedure	• Setting LAN address. **NOTE** • **If Auto is selected for [IP ADDR. SETTING], the items of [SUBNET MASK] and [GATEWAY] are automatically set. Key entry is therefore disabled for [SUBNET MASK] and [GATEWAY].**

C. DNS

(1) DNS AUTO SETTING

Function	• Sets whether or not the DNS server setting is to be specified. • If specifying the DNS server setting, the SMTP server can be specified as a host name when using network scanning. • If [ENABLE] is selected, type in the IP address of the DNS server. • If [DISABLE] is selected, the DNS server cannot be referenced.
Use	
Setting/ procedure	• The default setting is DISABLE. "DISABLE" ENABLE

(2) SPECIFY

Function	• Sets the DNS server address (up to three addresses).
Use	
Setting/ procedure	• The default setting is 0.0.0.0. DNS1 DNS2 DNS3

D. DHCP

Function	• Automatically acquires an IP address from the DHCP server, if there is one in the network, and specifies whether to load other network information.
Use	• To automatically acquire an IP address and load other network information.
Setting/ procedure	• The default setting is ENABLE. DISABLE “ENABLE” **NOTE** • **When setting the IP address manually, the [DHCP] setting is changed to [DISABLE].**

E. BOOTP

Function	• Automatically acquires an IP address from BOOTP and specifies whether to load other network information.
Use	• To automatically acquire an IP address and load other network information.
Setting/ procedure	• The default setting is DISABLE. “DISABLE” ENABLE **NOTE** • **When setting the IP address manually, the [BOOTP] setting is changed to [DISABLE].**

F. ARP/PING

Function	• Automatically acquires an IP address from ARP/PING and specifies whether to load other network information.
Use	• To automatically acquire an IP address and load other network information.
Setting/ procedure	• The default setting is DISABLE. “DISABLE” ENABLE **NOTE** • **When setting the IP address manually, the [ARP/PING] setting is changed to [DISABLE].**

G. HTTP

Function	• Select whether or not to enable HTTP.
Use	• If [ENABLE] is selected, HTTP is enabled. • If [DISABLE] is selected, HTTP is disabled.
Setting/ procedure	• The default setting is ENABLE. DISABLE “ENABLE”

H. FTP SERVER

Function	• Select whether or not to enable the FTP server.
Use	• If [ENABLE] is selected, FTP server is enabled. • If [DISABLE] is selected, FTP server is disabled.
Setting/ procedure	• The default setting is ENABLE. DISABLE “ENABLE”

I. FTP TX

Function	• Select whether or not to enable the FTP client.
Use	• If [ENABLE] is selected, FTP client is enabled. • If [DISABLE] is selected, FTP client is disabled.
Setting/ procedure	• The default setting is ENABLE. DISABLE “ENABLE”

J. SMB

Function	• Select whether or not to enable SMB.
Use	• If [ENABLE] is selected, SMB is enabled. • If [DISABLE] is selected, SMB is disabled.
Setting/ procedure	• The default setting is ENABLE. DISABLE “ENABLE”

K. BONJOUR

Function	• Select whether or not to use the bonjour setting.
Use	• To use when operating under the bonjour service environment. • If [ENABLE] is selected, Bonjour is enabled. • If [DISABLE] is selected, Bonjour is disabled.
Setting/ procedure	• The default setting is ENABLE. DISABLE “ENABLE”

L. DYNAMIC DNS

Function	• Select whether or not to enable Dynamic DNS.
Use	• If [ENABLE] is selected, Dynamic DNS is enabled. • If [DISABLE] is selected, Dynamic DNS is disabled.
Setting/ procedure	• The default setting is DISABLE. “DISABLE” ENABLE

M. IPP

Function	• Select whether or not to enable IPP.
Use	• If [ENABLE] is selected, IPP is enabled. • If [DISABLE] is selected, IPP is disabled.
Setting/ procedure	• The default setting is ENABLE. DISABLE “ENABLE”

N. RAW PORT
(1) DISABLE/ENABLE

Function	• Select whether or not to enable the raw port.
Use	• If [ENABLE] is selected, raw port is enabled. • If [DISABLE] is selected, raw port is disabled.
Setting/ procedure	• The default setting is ENABLE. DISABLE “ENABLE”

(2) BIDIRECTIONAL

Function	• Select whether or not to enable raw port bidirectional communication.
Use	• If [ENABLE] is selected, raw port bidirectional communication is enabled. • If [DISABLE] is selected, raw port bidirectional communication is disabled.
Setting/ procedure	• The default setting is DISABLE. “DISABLE” ENABLE

O. SLP

Function	• Select whether or not to enable SLP.
Use	• If [ENABLE] is selected, SLP is enabled. • If [DISABLE] is selected, SLP is disabled.
Setting/ procedure	• The default setting is ENABLE. DISABLE “ENABLE”

P. SNMP

Function	• Select whether or not to enable SNMP.
Use	• If [ENABLE] is selected, SNMP is enabled. • If [DISABLE] is selected, SNMP is disabled.
Setting/ procedure	• The default setting is ENABLE. DISABLE “ENABLE”

Q. WSD PRINT

Function	• Select whether or not to enable WSD printing.
Use	• If [ENABLE] is selected, WSD printing is enabled. • If [DISABLE] is selected, WSD printing is disabled.
Setting/ procedure	• The default setting is ENABLE. DISABLE “ENABLE”

R. IPSEC

Function	• Select whether or not to enable IPsec.
Use	• If [ENABLE] is selected, IPsec is enabled. • If [DISABLE] is selected, IPsec is disabled.
Setting/ procedure	• The default setting is DISABLE. “DISABLE” ENABLE

S. IP ADDR. FILTER

(1) ACCESS PER.

Function	• Specify access permissions for IP address filtering.
Use	• If [ENABLE] is selected, access permissions is enabled. • If [DISABLE] is selected, access permissions is disabled.
Setting/ procedure	• The default setting is DISABLE. “DISABLE” ENABLE

(2) ACCESS REFUSE

Function	• Specify access blocking for IP address filtering.
Use	• If [ENABLE] is selected, access blocking is enabled. • If [DISABLE] is selected, access blocking is disabled.
Setting/ procedure	• The default setting is DISABLE. "DISABLE" ENABLE

T. IPv6

(1) DISABLE/ENABLE

Function	• Select whether or not to enable IPv6.
Use	• If [ENABLE] is selected, IPv6 is enabled. • If [DISABLE] is selected, IPv6 is disabled.
Setting/ procedure	• The default setting is ENABLE. DISABLE "ENABLE"

(2) AUTO SETTING

Function	• Select whether or not to enable the IPv6 auto setting.
Use	• If [YES] is selected, IPv6 auto setting is enabled. • If [NO] is selected, IPv6 auto setting is disabled.
Setting/ procedure	• The default setting is YES. "YES" NO

(3) LINK LOCAL

Function Use	• Displays the link-local address.

(4) GLOBAL ADDRESS

Function Use	• Displays the global address.

(5) GATEWAY ADDRESS

Function Use	• Displays the gateway address.

U. NETWARE

Function	• Select whether or not to enable NetWare.
Use	• If [ENABLE] is selected, NetWare is enabled. • If [DISABLE] is selected, NetWare is disabled.
Setting/ procedure	• The default setting is DISABLE. "DISABLE" ENABLE

V. APPLETALK

Function	• Select whether or not to enable AppleTalk.
Use	• If [ENABLE] is selected, AppleTalk is enabled. • If [DISABLE] is selected, AppleTalk is disabled.
Setting/ procedure	• The default setting is ENABLE. DISABLE “ENABLE”

W. SPEED/DUPLEX

Function	• Sets the communication speed and method of network.
Use	• To set the network communication speed and method.
Setting/ procedure	• The default setting is AUTO. “AUTO” 10BASE FULL 10BASE HALF 100BASE FULL 100BASE HALF 1000BASE FULL

X. IEEE802.1X

Function	• Prevents unauthorized access by performing authentication by the RADIUS server under the network environment.
Use	• Set this function to YES when a network connection is made using the authentication server (RADIUS server).
Setting/ procedure	• The default setting is DISABLE. “DISABLE” ENABLE

11.4.4 E-MAIL SETTING

A. SMTP

Function	• Select whether or not to enable SMTP.
Use	• If [ENABLE] is selected, SMTP is enabled. • If [DISABLE] is selected, SMTP is disabled.
Setting/ procedure	• The default setting is ENABLE. DISABLE “ENABLE”

B. SENDER NAME

Function Use	• This function is used to specify the sender’s name.
Setting/ procedure	• The default setting is bizhub_C20. • Up to 20 characters can be entered for the sender name.

C. E-MAIL ADDRESS

Function Use	• This function is used to specify the e-mail address of the sender. **NOTE** • **Please consult customer’s network administrator for information about the e-mail address to use.**
Setting/ procedure	• Up to 64 characters can be entered for the sender address. • If customer does not receive e-mail on the copier, enter the e-mail address of the customer’s administrator.

D. DEFAULT SUBJECT

Function Use	• This function is used to specify the default subject line, when sending scan data as an e-mail attachment.
Setting/ procedure	• The default setting is from bizhub C20. • Up to 20 characters can be entered for the default subject.

E. SMTP SERVER ADDR.

Function Use	• This function is used to enter the IP address or host name of an SMTP server. **NOTE** • **Please consult customer's network administrator for information about the IP address to use.**
Setting/ procedure	• Up to 64 characters can be entered for the host name. • The DNS settings must have been specified before specifying the host name for the SMTP server.

F. SMTP PORT NO.

Function Use	• This function is used to enter the port number (1 to 65535) for the SMTP server. **NOTE** • **Please consult customer's network administrator for information about the port number to use.**
Setting/ procedure	• The port number can be set between 1 and 65535. • Normally, port number 25 is used.

G. SMTP TIMEOUT

Function Use	• This function is used to specify the length of time (in seconds) before the connection to the SMTP server times out. (30 to 300 seconds)
Setting/ procedure	• The default setting is 60sec. • The time out period can be between 30 and 300 seconds.

H. TEXT INSERT

Function Use	• This function is used to specify whether or not to insert text explaining that an image has been attached to an e-mail message, when sending scan data as an E-mail attachment.
Setting/ procedure	• The default setting is OFF. "OFF" ON • OFF: If OFF is selected, a blank e-mail message will be sent. • ON: If ON is selected, the following text is inserted in the e-mail message.

I. POP BEFORE SMTP
(1) DISABLE/ENABLE

Function Use	• This function is used to set whether or not to use POP before SMTP.
Setting/ procedure	• The default setting is DISABLE. "DISABLE" ENABLE • When [ENABLE] is selected, set the time (second) for POP BEFORE SMTP. The default setting is "1sec". (0 - 60sec)

(2) POP3 SERVER ADDR.

Function	• This function is used to enter the IP address or host name of an POP3 server.
Use	**NOTE** • **Please consult customer's network administrator for information about the IP address to use.** • **The [DNS] must have been specified before specifying the host name for the POP3 server.**
Setting/ procedure	• Up to 64 characters can be entered for the host name.

(3) POP3 PORT NO.

Function	• This function is used to enter the port number for the POP3 server.
Use	**NOTE** • **Please consult customer's network administrator for information about the port number to use.**
Setting/ procedure	• The default setting is “110”. (1 - 65535)

(4) POP3 TIMEOUT

Function	• This function is used to specify the length of time (in seconds) before the connection to the POP3 server times out.
Use	
Setting/ procedure	• The default setting is “30sec”. (30 - 300sec)

(5) POP3 ACCOUNT

Function	• This function is used to enter the account name used to log on to the POP3 server.
Use	**NOTE** • **Please consult customer's network administrator for information about the account name to use.**
Setting/ procedure	• Up to 64 characters can be entered for the account name.

(6) POP3 PASSWORD

Function	• This function is used to enter the password associated with the account name used to log in to the POP3 server.
Use	NOTE • **Please consult customer's network administrator for information about the password to use.**
Setting/ procedure	• Up to 32 characters can be entered for the password.

J. SMTP AUTH.

(1) DISABLE/ENABLE

Function Use	• If [ENABLE] is selected, SMTP Authentication is enabled.
Setting/ procedure	• The default setting is ENABLE. DISABLE “ENABLE”

(2) SMTP USER NAME

Function Use	• Type in the user name used for authentication with SMTP Authentication.
Setting/ procedure	• The default setting is Blank. • Up to 63 characters can be entered for the SMTP user name.

(3) SMTP PASSWORD

Function Use	• Type in the password used for authentication with SMTP Authentication.
Setting/ procedure	• The default setting is Blank. • Up to 15 characters can be entered for the password.

11.4.5 LDAP SETTING

A. DISABLE/ENABLE

Function Use	• This function is used to set whether or not to use LDAP.
Setting/ procedure	• The default setting is ENABLE. DISABLE “ENABLE”

B. LDAP SERVER ADDR.

Function	• To set the LDAP server address.
Use	• To enter LDAP server address.
Setting/ procedure	• The default setting is 0.0.0.0. *1.* Select the [LDAP SERVER ADDR.], then press Select key. *2.* Type in the IP address or host name for the LDAP server, then press Select key. • The host name can contain a maximum of 64 characters.

C. LDAP PORT NO.

Function	• To set the LDAP server port number.
Use	• To enter the LDAP server port number.
Setting/ procedure	• When SSL Setting is disable, the default value is 389. • When SSL Setting is enable, the default value is 636. *1.* Select the [LDAP PORT NO.], then press Select key. *2.* Type in the port number (1 - 65535), then press Select key.

D. SSL SETTING

Function	• To set whether to use SSL (data encryption) for connecting to LDAP server.
Use	• To use SSL (data encryption) for connecting to LDAP server.
Setting/ procedure	• The default setting is DISABLE. "DISABLE" ENABLE

E. SEARCH BASE

Function	• To set the directory path for LDAP server.
Use	• To enter the directory path for LDAP server.
Setting/ procedure	1. Select the [SEARCH BASE], then press Select key. 2. Specify the database where the LDAP server is searched, then press Select key. • The search base can contain a maximum of 64 characters.

F. ATTRIBUTE

Function	• To set a search attribute that is used to search a destination from LDAP server.
Use	• To enter a search attribute that is used to search a destination from LDAP server.
Setting/ procedure	1. Select the [ATTRIBUTE], then press Select key. 2. Type in the attribute, then press Select key. • The attribute can contain a maximum of 32 characters.

G. SEARCH METHOD

Function	• To set a search method that is used to search a destination.
Use	• To change a search method that is used to search a destination.
Setting/ procedure	• The default setting is CONTAIN. BEGIN "CONTAIN" END

H. LDAP TIMEOUT

Function	• To set the Max. time-out period for LDAP search.
Use	• To change the Max. time-out period for LDAP search.
Setting/ procedure	• The default setting is 60 sec. (5 - 300 sec.) 1. Select the [LDAP TIMEOUT], then press Select key. 2. Type in the length of time (in seconds) until the LDAP search times out, then press Select key.

I. MAX. SEARCH RESULTS

Function	• To set the Max. results of address for LDAP search.
Use	• To change the Max. results of address for LDAP search.
Setting/ procedure	• The default setting is 100 (5 - 100) 1. Select the [MAX. SEARCH RESULTS], then press Select key. 2. Type in the maximum number of items, then press Select key.

J. AUTHENTICATION

Function	• To set the authentication method to logon to LDAP server.
Use	• To change the authentication method to logon to LDAP server. [ANONYMOUS]: User name and password are not necessary (Dynamic authentication will be invalid when anonymous is selected.) [SIMPLE]: Simple method which needs the user name and the password [DIGEST-MD5]: Method available with normal LDAP server. When failing to authenticate with Digest-MD5, it automatically switches to CRAMMD5. [GSS-SPNEGO]: Method available with Windows active directory (Kerberos authentication).
Setting/ procedure	• The default setting is ANONYMOUS. "ANONYMOUS" / SIMPLE / DIGEST-MD5 / GSS-SPNEGO

K. LDAP ACCOUNT

Function	• To set the account name to connect to LDAP server.
Use	• To set the account name to connect to LDAP server.
Setting/ procedure	*1.* Select the [LDAP ACCOUNT], then press Select key. *2.* Type in the account name for the LDAP server, then press Select key. • The account name can contain a maximum of 64 characters.

L. LDAP PASSWORD

Function	• To set the password for connecting to LDAP server.
Use	• To set the password for connecting to LDAP server.
Setting/ procedure	*1.* Select the [LDAP PASSWORD], then press Select key. *2.* Type in the password, then press Select key. • The password can contain a maximum of 32 characters.

M. DOMAIN NAME

Function	• To set the domain name for connecting to LDAP server.
Use	• To set the domain name for connecting to LDAP server.
Setting/ procedure	*1.* Select the [DOMAIN NAME], then press Select key. *2.* Type in the domain name, then press Select key. • The domain name can contain a maximum of 64 characters.

11.4.6 CAMERA DIRECT

Function	• Select whether or not to enable camera direct printing.
Use	• If [ENABLE] is selected, camera direct printing is enabled. • If [DISABLE] is selected, camera direct printing is disabled.
Setting/ procedure	• The default setting is ENABLE. DISABLE "ENABLE"

11.4.7 USB SETTING

Function Use	• To set the operating system of the PC to which this machine is connected with a USB cable.
Setting/ procedure	• The default setting is Windows. "Windows" Mac

11.4.8 COMM. SETTING

A. TONE/PULSE

Function Use	• This function can be used to specify the dialing system. If this function is not correctly set to the type of dialing system used, faxes cannot be sent. Select the correct setting after checking which type of dialing system is used by your telephone line. • There are two types of telephone dialing systems: tone dialing (PB) and pulse dialing (DP10pps or DP20pps). Faxes cannot be sent if this machine is not set to the system used by your telephone line. Select the correct setting after checking which type of dialing system is used.
Setting/ procedure	• The default setting is TONE. "TONE": Tone line PULSE 10pps: Pulse line of 10 pps PULSE 20pps: Pulse line of 20 pps **NOTE** • **If [PTT SETTING] in the [USER SETTING] menu is set to USA, CANADA or NEW ZEALAND, the settings cannot be changed.**

B. LINE MONITOR

Function Use	• This function can be used to set the volume when monitoring communication to [HIGH], [LOW] or [OFF].
Setting/ procedure	• The default setting is LOW. OFF "LOW" HIGH

C. PSTN/PBX

Function Use	• This function can be used to set whether the connected telephone wiring is a public switched telephone network (PSTN) or a private branch exchange (PBX). For a PBX system, the outside line access number (or extension number) must be specified. • The connected wiring system can be set to either PSTN (Public Switched Telephone Network) or PBX (Private Branch Exchange). For a PBX system, the outside line access number (or extension number) must be specified. The outside line access number (or extension number) is programmed in the [#] key.
Setting/ procedure	• The default setting is PSTN. "PSTN": Public Switched Telephone Network PBX: Private Branch Exchange

11.4.9 USER SETTING

A. PTT SETTING

Function	• Sets the country where this machine is installed.
Use	• To change the country where this machine is installed.
Setting/ procedure	• The default setting is USA. "U.S.A" UNITED KINGDOM VIETNAM ARGENTINA AUSTRALIA AUSTRIA BELGIUM BRAZIL CANADA CHINA CZECH DENMARK EUROPE FINLAND FRANCE GERMANY GREECE HONG KONG HUNGARRY IRELAND ISRAEL ITALY KOREA MALAYSIA MEXICO THE NETHERLANDS NEW ZEALAND NORWAY PHILIPPINES POLAND PORTUGAL RUSSIA SAUDI ARABIA SINGAPORE SLOVAKIA SOUTH AFRICA SPAIN SWEDEN SWITZERLAND TAIWAN TURKEY **NOTE** **When this setting was changed, the following settings will return to their default automatically.** **• [LANGUAGE]** **• [PAPER SETUP]** **• [DATE FORMAT]** **• [PRESET ZOOM]** **• [SOFT SWITCH]**

B. DATE & TIME

Function	• Sets the date and time to be indicated on the output of print report.
Use	• At the installation or when date and time need to be changed.

C. DATE FORMAT

Function	• Sets the format of the date to be indicated on the output of PRINT REPORT.
Use	• To change the format of the date to be indicated on the output of PRINT REPORT
Setting/ procedure	• The default setting is MM/DD/YY. "MM/DD/YY" DD/MM/YY YY/MM/DD

D. PRESET ZOOM

Function	• Sets the type of paper for fixed zoom ratio setting.
Use	• To change the type of paper for fixed zoom ratio setting
Setting/ procedure	• The default setting is "INCH" (for the inch areas) or "METRIC" (for the metric areas). "INCH" "METRIC"

E. USER FAX NUMBER

Function Use	• Enter user fax number. • The specified number is printed in the header of sent faxes.
Setting/ procedure	• Max. 20 digits. • The characters which can be inputted are "numbers from 0 to 9", "Space", "+" and "-."

F. USER NAME

Function	• The User Name is used for the indication of destination station at the time of the communication between same models.
Use	
Setting/ procedure	• Maximum 32 digits character can be inputted.

11.4.10 AUTO REDIAL

A. NUMBER OF REDIAL

Function	• To specify the number of times a redial is attempted if there is no answer, for example, when the line is busy.
Use	
Setting/ procedure	• 1 - 10 (Default: Depends on [PTT SETTING])

B. INTERVAL

Function	• To specify the interval between redial attempts.
Use	
Setting/ procedure	• 1 - 99 (Default: Depends on [PTT SETTING])

11.4.11 SUPPLIES REPLACE

A. TRANSFER BELT

Function	• Resets the transfer belt counter.
Use	• To use when the transfer belt has been replaced.
Setting /procedure	*1.* Select [SUPPLIES REPLACE] → [TRANSFER BELT]. *2.* Press the Select key. *3.* Press the Select key and reset the counter.

B. FUSER UNIT

Function	• Resets the fuser unit counter.
Use	• To use when the fuser unit has been replaced.
Setting /procedure	*1.* Select [SUPPLIES REPLACE] → [FUSER UNIT]. *2.* Press the Select key. *3.* Press the Select key and reset the counter.

C. TRANSFER ROLLER

Function	• Resets the transfer roller counter.
Use	• To use when the transfer roller has been replaced.
Setting /procedure	*1.* Select [SUPPLIES REPLACE] → [TRANSFER ROLLER]. *2.* Press the Select key. *3.* Press the Select key and reset the counter.

11.5 COPY SETTING

11.5.1 PAPER PRIORITY

Function	• Selects the priority tray.
Use	• To change the priority tray
Setting/ procedure	• The default setting is TRAY2. TRAY1 "TRAY2" TRAY3 **NOTE** **• If Tray 3 is not installed, TRAY3 does not appear.**

11.5.2 QUALITY PRIORITY

Function Use	• To set the priority image quality mode that is selected when the power switch is turned ON.
Setting/ procedure	• The default setting is MIX. "MIX" TEXT PHOTO FINE/MIX FINE/TEXT FINE/PHOTO

11.5.3 DENSITY PRIORITY

Function Use	• To set the priority density that is selected when the power switch is turned ON
Setting/ procedure	• The default setting is AUTO. "AUTO" MANUAL

11.5.4 DENSITY LEVEL

A. AUTO

Function Use	• To set the density level when the Auto density is selected.
Setting/ procedure	• The default setting is  . LIGHT -1 "0" +1 DARK **NOTE** **• Valid only if [TEXT] or [FINE/TEXT] is selected for [QUALITY PRIORITY]**

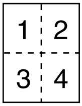
B. MANUAL

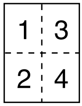
Function Use	• To set the density level when the Manual density is selected.
Setting/ procedure	• The default setting is  . LIGHT -3 -2 -1 "0" +1 +2 +3 DARK

11.5.5 OUTPUT PRIORITY

<table>
<tr><td>Function</td><td rowspan="2">• To set the priority finishing function, either non-sort, sort, or group.</td></tr>
<tr><td>Use</td></tr>
<tr><td>Setting/
procedure</td><td>• The default setting is NON-SORT.
“NON-SORT” SORT</td></tr>
</table>

11.5.6 4IN1 COPY ORDER

<table>
<tr><td>Function</td><td rowspan="2">• To set the layout of copy images in 4in1 copies.</td></tr>
<tr><td>Use</td></tr>
<tr><td>Setting/
procedure</td><td>• The default setting is SIDEWISE.
“SIDEWISE” DOWNWARD



</td></tr>
</table>

11.5.7 DUPLEX COPY

<table>
<tr><td>Function</td><td rowspan="2">• When conditions necessary for crisscross sorting are met, crisscross sorting can be set to OFF, LONG EDGE or SHORT EDGE.</td></tr>
<tr><td>Use</td></tr>
<tr><td>Setting/
procedure</td><td>• The default setting is OFF.
“OFF” LONG EDGE SHORT EDGE</td></tr>
</table>

11.6 DIAL REGISTER

11.6.1 FAVORITE

Function Use	• Frequently used speed dial and group dial destinations (maximum of 20) can be registered on the favorite list to allow the fax number to quickly be recalled. **NOTE** **• Before registering destinations in the favorite list, register them as [SPEED DIAL] or [GROUP DIAL] destinations.**
Setting/ procedure	*1.* Press the Address Book key, and then press the ▲ and ▼ key to quickly select the desired destination.

11.6.2 SPEED DIAL

Function Use	• Frequently specified fax numbers (maximum of 220) can be registered as speed dial destinations. In addition, batch transmission settings can be specified.
Setting/ procedure	• The contents of registration. • Destination name: 20 characters. • Dial No.: 30 digits. E-mail address: 64 characters. • Registered data: Automatically.

11.6.3 GROUP DIAL

Function Use	• Fax numbers frequently specified for broadcast transmission can be registered as a group dial destination. A maximum of 50 destinations can be registered together as one group. **NOTE** **• Before registering a group dial destination, register the destinations as [SPEED DIAL] destinations.**
Setting/ procedure	• The contents of registration. • Group name: 20 characters. • Information of destination station: The contents of speed dial.

11.7 FAX TX OPERATION

11.7.1 DENSITY LEVEL

Function	• This function can be used to set the default scanning contrast level to one of three settings between [LIGHT] and [DARK].
Use	• For dark-colored paper (media), select a setting towards [LIGHT]. For faint or colored text, select a setting toward [DARK].
Setting/ procedure	• The default setting is . LIGHT -1 “0” +1 DARK

11.7.2 QUALITY PRIORITY

Function Use	• This function can be used to set the default scanning resolution (image quality) to one of the following.
Setting/ procedure	• The default setting is STD/TEXT. "STD/TEXT" FINE/TEXT S-FINE/TEXT STD/PHOTO FINE/PHOTO S-FINE/PHOTO

11.7.3 DEFULT TX

Function Use	• This function can be used to set the default of TX mode.
Setting/ procedure	• The default setting is MEMORY TX. "MEMORY TX" DIRECT TX

11.7.4 HEADER

Function Use	• This function can be used to set the default setting (ON or OFF) for adding the header (date sent, sender's name and fax number, etc.) when sending faxes.
Setting/ procedure	• The default setting is ON. "ON": Add header OFF: No header **NOTE** • **For USA, CANADA, KOREA, Header print is set ON, and setting change to OFF by the user is not allowed.** The contents of registration. • TX data and time. • Transmitter's own name. • Transmitter's own tel number. • Session number. • Page number. • Total page number (only displayed by use the memory TX job). It is selectable by soft switch to transmit only pages which have failed to transmit, if communication error occurs on the way transmitting document. In this case, page number on Header Print is continued from the page number of the document successfully transmitted. Whether user setting is allowed or not is selectable with Soft switch. Attaching Header Print: • Image within 4 mm (1/4 in.) top margin of transmitting document is not transmitted and Header print data is attached.

11.8 FAX RX OPERATION

11.8.1 MEMORY RX MODE

Function Use	• This function can be used to set whether to allow [ON] memory reception or not [OFF]. In cases when confidential faxes are being received, the received document can be stored in the memory and printed at a specified time or when memory reception is set to [OFF]. A password can be set to specify the starting time or ending time of memory reception, or to cancel the function. The set starting time and ending time are valid every day until memory reception is turned off.
Setting/ procedure	• The default setting is OFF. ON: Enable memory RX mode "OFF": Disable memory RX mode

11.8.2 NO. of RINGS

Function Use	• This function can be used to set the number of rings between 1 and 16 until the call is answered.
Setting/ procedure	• Default: Depends on [PTT SETTING]. • Depend on soft switch setting of marketing area. 1: Once "2": Twice 3: 3 times 4: 4 times 5: 5 times 6: 6 times 7: 7 times 8: 8 times 9: 9 times 10: 10 times 11: 11 times 12: 12 times 13: 13 times 14: 14 times 15: 15 times 16: 16 times

11.8.3 REDUCTION RX

Function Use	• This function can be used to set whether documents longer than the paper are printed reduced [ON], split [OFF], or discarded [CUT]. However, when sending a document more than 24 mm (1 inch) longer than the paper, [CUT] is not available. (In this case, the document is split.)
Setting/ procedure	• The default setting is ON. OFF: 100% RX mode "ON": Reduction print mode CUT: Cut mode

A. Reduction print mode

- It reduces (only the FD direction) and prints so that receiving data will in a recording media.

Recording media size	Footer	Length of received image	Printing
A4	OFF	Less than 289 mm	1 page with 100%
		290 mm to 313 mm	1 page with (289 mm / image length)% reduction
		314 mm to 570 mm	Divide into 2 pages with 100%
		571 mm to 851 mm	Divide into 3 pages with 100%
		852 mm or more	Divide into 4 pages (or more) with 100%
	ON	Less than 285 mm	1 page with 100%
		286 mm to 381 mm	1 page with (285 mm / image length)% reduction
		382 mm to 562 mm	Divide into 2 pages with 100%
		563 mm to 839 mm	Divide into 3 pages with 100%
		840 mm or more	Divide into 4 pages (or more) with 100%
Letter	OFF	Less than 271 mm	1 page with 100%
		272 mm to 387 mm	1 page with (271 mm / image length)% reduction
		388 mm to 534 mm	Divide into 2 pages with 100%
		535 mm to 797 mm	Divide into 3 pages with 100%
		798 mm or more	Divide into 4 pages (or more) with 100%
	ON	Less than 267 mm	1 page with 100%
		268 mm to 291 mm	1 page with (267 mm / image length)% reduction
		292 mm to 526 mm	Divide into 2 pages with 100%
		527 mm to 785 mm	Divide into 3 pages with 100%
		786 mm or more	Divide into 4 pages (or more) with 100%
Legal	OFF	Less than 348 mm	1 page with 100%
		349 mm to 371 mm	1 page with (347 mm / image length)% reduction
		372 mm to 688 mm	Divide into 2 pages with 100%
		689 mm to 1,028 mm	Divide into 3 pages with 100%
		1,029 mm or more	Divide into 4 pages (or more) with 100%
	ON	Less than 344 mm	1 page with 100%
		345 mm to 367 mm	1 page with (343 mm / image length)% reduction
		368 mm to 680 mm	Divide into 2 pages with 100%
		681 mm to 1,016 mm	Divide into 3 pages with 100%
		1,017 mm or more	Divide into 4 pages (or more) with 100%

Recording media size	Footer	Length of received image	Printing
Oficio	OFF	Less than 335 mm	1 page with 100%
		336 mm to 359 mm	1 page with (335 mm / image length)% reduction
		360 mm to 662 mm	Divide into 2 pages with 100%
		663 mm to 989 mm	Divide into 3 pages with 100%
		990 mm or more	Divide into 4 pages (or more) with 100%
	ON	Less than 331 mm	1 page with 100%
		332 mm to 355 mm	1 page with (331 mm / image length)% reduction
		356 mm to 654 mm	Divide into 2 pages with 100%
		655 mm to 977 mm	Divide into 3 pages with 100%
		978 mm or more	Divide into 4 pages (or more) with 100%

B. 100% RX mode

- All receiving data is divided into 2 pages or more, and is printed.

Recording media size	Footer	Length of received image	Printing
A4	OFF	Less than 289 mm	1 page
		290 mm to 570 mm	Divide into 2 pages
		571 mm to 851 mm	Divide into 3 pages
		852 mm or more	Divide into 4 pages or more
	ON	Less than 285 mm	1 page
		286 mm to 562 mm	Divide into 2 pages
		563 mm to 839 mm	Divide into 3 pages
		840 mm or more	Divide into 4 pages or more
Letter	OFF	Less than 271 mm	1 page
		272 mm to 534 mm	Divide into 2 pages
		535 mm to 797 mm	Divide into 3 pages
		798 mm or more	Divide into 4 pages or more
	ON	Less than 267 mm	1 page
		268 mm to 526 mm	Divide into 2 pages
		527 mm to 785 mm	Divide into 3 pages
		786 mm or more	Divide into 4 pages or more
Legal	OFF	Less than 348 mm	1 page
		349 mm to 688 mm	Divide into 2 pages
		689 mm to 1,028 mm	Divide into 3 pages
		1,029 mm or more	Divide into 4 pages or more
	ON	Less than 344 mm	1 page
		345 mm to 680 mm	Divide into 2 pages
		681 mm to 1,016 mm	Divide into 3 pages
		1,017 mm or more	Divide into 4 pages or more
Oficio	OFF	Less than 335 mm	1 page
		356 mm to 662 mm	Divide into 2 pages
		663 mm to 989 mm	Divide into 3 pages
		990 mm or more	Divide into 4 pages or more
	ON	Less than 331 mm	1 page
		332 mm to 654 mm	Divide into 2 pages
		655 mm to 977 mm	Divide into 3 pages
		978 mm or more	Divide into 4 pages or more

C. Cut mode

- The data that is larger than 1-page record area is cut and not recorded (to 24 mm).

Recording media size	Footer	Length of received image	Printing
A4	OFF	Less than 289 mm	1 page
		290 mm to 313 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		314 mm to 570 mm	Divide into 2 pages
		571 mm to 594 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		595 mm to 851 mm	Divide into 3 pages
		852 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 285 mm	1 page
		286 mm to 309 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		310 mm to 562 mm	Divide into 2 pages
		563 mm to 586 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		587 mm to 839 mm	Divide into 3 pages
		840 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
Letter	OFF	Less than 271 mm	1 page
		272 mm to 295 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		296 mm to 534 mm	Divide into 2 pages
		535 mm to 558 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		559 mm to 797 mm	Divide into 3 pages
		798 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 267 mm	1 page
		268 mm to 291 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		292 mm to 526 mm	Divide into 2 pages
		527 mm to 550 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		551 mm to 785 mm	Divide into 3 pages
		786 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
Legal	OFF	Less than 348 mm	1 page
		349 mm to 371 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		372 mm to 688 mm	Divide into 2 pages
		689 mm to 712 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		713 mm to 1,028 mm	Divide into 3 pages
		1,029 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 344 mm	1 page
		345 mm to 367 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		368 mm to 680 mm	Divide into 2 pages
		681 mm to 704 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		705 mm to 1,016 mm	Divide into 3 pages
		1,017 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.

Recording media size	Footer	Length of received image	Printing
Oficio	OFF	Less than 335 mm	1 page
		336 mm to 359 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		360 mm to 662 mm	Divide into 2 pages
		663 mm to 686 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		687 mm to 989 mm	Divide into 3 pages
		990 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 331 mm	1 page
		332 mm to 355 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		356 mm to 654 mm	Divide into 2 pages
		655 mm to 678 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		679 mm to 977 mm	Divide into 3 pages
		978 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.

11.8.4 RX PRINT

Function Use	• This function can be used to set whether the fax is only printed after all document pages have been received [MEMORY RX] or printing begins as soon as the first page of the document is received [PRINT RX].
Setting/ procedure	• The default setting is MEMORY RX. “MEMORY RX”: Printed after all document pages have been received. PRINT RX: Printing begins as soon as the first page of the document is received.

11.8.5 RX MODE

Function Use	• This function can be used to set the reception mode to automatic reception [AUTO RX] or manual reception [MANUAL RX]. • Automatic reception: Automatically begins receiving after the set number of rings. • Manual reception: Does not automatically receive the fax. Reception begins after making a connection by picking up the telephone receiver or pressing the On hook key, then pressing the Start key.
Setting/ procedure	• The default setting is AUTO RX. “AUTO RX”: Automatic reception MANUAL RX: Manual reception

11.8.6 FORWARD

Function	• This function can be used to set whether or not the received document is forwarded.
Use	**NOTE** • **In order to forward the document to an e-mail address, the optional image controller or network interface card is required.**
Setting/ procedure	• The default setting is OFF. "OFF" ON ON (PRINT) ON: The received document is forwarded to the specified fax number or e-mail address. ON (PRINT): The received document is printed by this machine at the same time that it is forwarded to the specified fax number or e-mail address.

11.8.7 FOOTER

Function Use	• This function can be used to set whether or not the reception information (date received, number of pages, etc.) is printed at the bottom of each received document.
Setting/ procedure	• The default setting is OFF. OFF: No footer ON: Add footer

A. Attaching footer print

When footer is selected ON, it is printed at the end of printable area. 4 mm line area from the end of printable area is kept for printing footer. It should be attached on footer area regardless of image length. If the received image is divided into 2 pages or more, footer is printed in the specified location of all the recording sheets of media printed.

Image data area:
The received image data is printed on the area except for 12 mm from recording media size. (No printable area: 8 mm ($^1/_3$ in) + footer area: 4 mm ($^1/_4$ in)) The following table is the image printable area of each recording media size due to setting of footer print.

Media length		Footer OFF	Footer ON	
		Image data area	Image data area	Footer area
A4S	297 mm	289 mm	285 mm	+4 mm
LetterS	279 mm	271 mm	267 mm	+4 mm
Legal	356 mm	348 mm	344 mm	+4 mm
Oficio	343 mm	335 mm	331 mm	+4 mm

11.8.8 SELECT TRAY

Function Use	• This function can be used to select which paper tray can be used to supply paper when printing received documents or transmission reports. (A paper tray that cannot be used for supplying paper can also be specified.)
Setting/ procedure	*1.* Select the tray. TRAY1 TRAY2 TRAY3 **NOTE** • **If Tray 3 is not installed, TRAY3 does not appear.** *2.* Select the [DISABLE] or [ENABLE]. • The default setting is ENABLE. DISABLE “ENABLE”

11.9 REPORTING

11.9.1 ACTIVITY REPORT

Function Use	• Every 60 transmissions/receptions, a report can be printed to show the results of the transmissions/receptions. This function can be used to set whether the report is printed automatically when the 60th transmission/ reception is reached.
Setting/ procedure	• The default setting is ON. “ON” OFF

11.9.2 TX RESULT REPORT

Function Use	• This function can be used to set whether the report showing the result of a transmission is printed automatically after the transmission is finished.
Setting/ procedure	• The default setting is ON (ERROR). ON “ON (ERROR)” OFF ON: Prints the report after each transmission. ON (ERROR): Prints the report after a transmission only if an error occurred. OFF: Does not print the report after each transmission, even if an error has occurred.

11.9.3 RX RESULT REPORT

Function Use	• This function can be used to set whether the report showing the result of a reception is printed automatically after mailbox reception is finished. (If regular reception is not finished normally, a report will always be printed, regardless of the selected setting.)
Setting/ procedure	• The default setting is ON (ERROR). ON “ON (ERROR)” OFF ON: Prints the report after each reception. ON (ERROR): Prints the report after a reception only if an error occurred. OFF: Does not print the report after each reception, even if an error has occurred.

11.10 SCAN SETTING

11.10.1 RESOLUTION

Function Use	• The default settings for resolution used by the scan functions can be specified.
Setting/ procedure	• The default setting is 150x150dpi. "150x150dpi" 300x300dpi 600x600dpi **NOTE** • **When using the ADF to scan in color or grayscale, 300x300 is automatically selected, even if the resolution was set to 600x600.**

11.10.2 IMAGE FORMAT

Function Use	• The default settings for data format used by the scan functions can be specified.
Setting/ procedure	• The default setting is PDF. TIFF "PDF" JPEG

11.10.3 CODING METHOD

Function Use	• The default settings for coding method, used by the scan functions can be specified.
Setting/ procedure	• The default setting is MH. "MH" MR MMR **NOTE** • **These settings are available only if B&W was selected for the color setting during the e-mail transmission.**

11.10.4 FILE SIZE

Function Use	• Specify the maximum data size (in Mb) for scan data sent by e-mail.
Setting/ procedure	• The default setting is NO SPLIT. "NO SPLIT" SPLIT • If SPLIT is selected, specify the maximum size between 1 and 10 Mb.

11.10.5 QUALITY PRIORITY

Function Use	• Select the scan data quality that is used as a default.
Setting/ procedure	• The default setting is MIX. "MIX" TEXT PHOTO

11.10.6 DENSITY LEVEL

Function	• Select the scan data density that is used as a default.
Use	
Setting/ procedure	• The default setting is . LIGHT -2 -1 "0" +1 +2 DARK

11.11 DIRECT PRINT

NOTE

- **When [ADMIN.MANAGEMENT] - [CAMERA DIRECT] is set "DISABLE" this menu is not displayed.**

11.11.1 IMAGE QUALITY

Function	• Sets the output resolution for camera direct photo printing.
Use	• To change the output resolution for camera direct photo printing.
Setting/ procedure	• The default setting is NORMAL. "NORMAL" FINE

11.11.2 PAPER SIZE

Function	• Sets the paper size for camera direct photo printing.
Use	• To change the paper size for camera direct photo printing. • The default setting varies according to the voltage of the printer.
Setting/ procedure	<TRAY1 PAPER> "PLAIN PAPER" / THICK PAPER / THICK PAPER2 / LABELS / POSTCARD / GLOSSY / GLOSSY2 • When a setting other than [POSTCARD] is selected: "LETTER" / "A4" / A5 / STATEMENT / B5 • When [POSTCARD] is selected: "LETTER" / "A4" / A5 / STATEMENT / B5 / J-POSTCARD 100X148 • When [GLOSSY] or [GLOSSY2] is selected: "LETTER" / "A4" / A5 / STATEMENT / B5 / PHOTO SIZE 10X15 / LTR 2UP SPL / A4 4UP SPL / A4 2UP SPL <TRAY2 PAPER> • The default setting is A4 or LETTER. "A4" / "LETTER"

11.11.3 N-UP LAYOUT

Function	• Sets the number of images printed on one page for camera direct photo printing.
Use	• To specify the number of camera direct photo printing images to be printed on each sheet.
Setting/ procedure	• The default setting is 1. "1" / 2 / 3 / 4 / 6 / 8

12. PS/PCL PRINT mode

12.1 PS/PCL PRINT mode function tree

- <*1>: This menu item appears only if an optional hard disk kit is installed.
- <*2>: This function becomes available only when the optional tray3 is mounted on the machine.
- <*3>: This menu item appears only if an optional hard disk kit or a CompactFlash card of 1GB or more is installed.
- <*4>: This menu item appears only if an optional CompactFlash card is installed.

PS/PCL PRINT mode				Ref. page
PROOF/PRINT MENU <*1>				P.167
PAPER MENU	ANY TRAY SETTING	TRAY1 PAPER	TRAY1 ANY SIZE	P.167
			TRAY1 ANY TYPE	P.167
		TRAY2 PAPER	TRAY2 ANY SIZE	P.168
			TRAY2 ANY TYPE	P.168
		TRAY3 PAPER <*2>	TRAY3 ANY TYPE	P.168
	TRAY CHAINING			P.168
	TRAY MAPPING	TRAY MAPPING MD.		P.168
		LOGICAL TRAY 0-9		P.168
	DUPLEX			P.169
	COPIES			P.169
	COLLATE <*3>			P.169
QUALITY MENU	COLOR MODE			P.170
	BRIGHTNESS			P.170
	HALFTONE	IMAGE PRINTING		P.170
		TEXT PRINTING		P.170
		GRFX. PRINTING		P.171
	EDGE ENHANCEMENT	IMAGE PRINTING		P.171
		TEXT PRINTING		P.171
		GRFX. PRINTING		P.171
	EDGE STRENGTH			P.171
	ECONOMY PRINT			P.172
	PCL SETTING	CONTRAST		P.172
		IMAGE PRINTING	RGB SOURCE	P.172
			RGB INTENT	P.172
			RGB GRAY	P.173
		TEXT PRINTING	RGB SOURCE	P.173
			RGB INTENT	P.173
			RGB GRAY	P.173
		GRFX. PRINTING	RGB SOURCE	P.174
			RGB INTENT	P.174
			RGB GRAY	P.174

PS/PCL PRINT mode				Ref. page
	PS SETTING	IMAGE PRINTING	RGB SOURCE	P.174
			RGB INTENT	P.175
			RGB GRAY	P.175
			DESTINATION PROF	P.175
		TEXT PRINTING	RGB SOURCE	P.175
			RGB INTENT	P.176
			RGB GRAY	P.176
			DESTINATION PROF	P.176
		GRFX. PRINTING	RGB SOURCE	P.176
			RGB INTENT	P.177
			RGB GRAY	P.177
			DESTINATION PROF	P.177
		SIMULATION	SIMULATION PROF	P.177
			SIM. INTENT	P.178
			CMYK GRAY	P.178
	CALIBRATION	TONE CALIBRATION		P.178
		CMYK DENSITY	CYAN	P.178
			MAGENTA	P.178
			YELLOW	P.179
			BLACK	P.179
		COLOR SEPARATION		P.179
SYS DEFAULT MENU	EMULATION	DEF. EMULATION		P.179
		POSTSCRIPT	WAIT TIMEOUT	P.179
			PS ERROR PAGE	P.179
			PS PROTOCOL	P.180
		PCL	CR/LF MAPPING	P.180
			LINES PER PAGE	P.180
			FONT SOURCE	P.180
		XPS <*3>	DIGITAL SGN.	P.181
			XPS ERROR PAGE	P.181
	PAPER	DEFAULT PAPER	PAPER SIZE	P.181
			CUSTOM SIZE	P.182
			PAPER TYPE	P.182
	GRAYSCALE PAGE			P.182
	STARTUP OPTIONS	DO STARTUP PAGE		P.182
	HOLD JOB TIMEOUT <*1>			P.183
	HDD FORMAT <*1>	USER AREA ONLY		P.183
		ALL		
	CARD FORMAT <*4>	USER AREA ONLY		P.183
		ALL		

12.2 PROOF/PRINT MENU

Function	• Selects and prints the job held temporarily in the printer. • Selects and deletes the job held temporarily in the printer. **NOTE** **• This menu is available only when an optional hard disk kit is installed.**
Use	• To proof one copy of a print job before printing the rest of the copies.
Setting/ procedure	• How to print the held job *1.* Select [PS/PCL PRINT] - [PROOF/PRINT MENU] and press the Select key. *2.* Select user name and press the Select key. *3.* Select desired print job and press the Select key. *4.* Select [PRINT] and press the Select key. *5.* If a password has been specified for the selected job, type in the password, and then press the Select key. *6.* Specify the number of copies (1 to 9999), and then press the Select key. *7.* To print color copies, press the Start-Color key. To print monochrome copies, press the Start-B&W key.
	• How to delete the held job *1.* Select [PS/PCL PRINT] - [PROOF/PRINT MENU] and press the Select key. *2.* Select user name and press the Select key. *3.* Select desired print job and press the Select key. *4.* Select [DELETE] and press the Select key. *5.* If a password has been specified for the selected job, type in the password, and then press the Select key. *6.* Select [YES], and then press the Select key.

12.3 PAPER MENU

12.3.1 ANY TRAY SETTING

A. TRAY1 PAPER

(1) TRAY1 ANY SIZE

Function	• Select whether or not the any paper size setting is selected for tray 1.
Use	• ON is automatically selected, if the setting for the following function is changed from the standard size to custom size: [UTILITY] - [PAPER SETUP] - [TRAY1 PAPER].
Setting/ procedure	• The default setting is OFF. ON / “OFF”

(2) TRAY1 ANY TYPE

Function Use	• Select whether or not the any media type setting is selected for tray 1.
Setting/ procedure	• The default setting is OFF. ON / “OFF”

B. TRAY2 PAPER
(1) TRAY2 ANY SIZE

Function	• Select whether or not the any paper size setting is selected for tray 1.
Use	• ON is automatically selected, if the setting for the following function is changed from the standard size to custom size: [UTILITY] - [PAPER SETUP] - [TRAY2 PAPER].
Setting/ procedure	• The default setting is OFF. ON / “OFF”

(2) TRAY2 ANY TYPE

Function Use	• Select whether or not the any media type setting is selected for tray 2.
Setting/ procedure	• The default setting is OFF. ON / “OFF”

C. TRAY3 PAPER
(1) TRAY3 ANY TYPE

Function Use	• Select whether or not the any media type setting is selected for tray 3.
Setting/ procedure	• The default setting is OFF. ON / “OFF”

12.3.2 TRAY CHAINING

Function	• Sets auto tray switching.
Use	• To specify that the printer should pull media from another tray when the specified tray runs is empty.
Setting/ procedure	• The default setting is ON. “ON” / OFF

12.3.3 TRAY MAPPING

A. TRAY MAPPING MD.

Function	• Selects whether or not the tray mapping function is used.
Use	• To specify whether trays are mapped.
Setting/ procedure	• The default setting is OFF. ON / “OFF”

B. LOGICAL TRAY0-9

Function	• Specifies whether jobs received from another manufacturer’s printer driver are printed using tray 1 to tray 3.
Use	• To specify the media source for print jobs using another manufacturer’s printer driver.
Setting/ procedure	• Only the default for LOGICAL TRAY 1 is PHYSICAL TRAY 1. PHYSICAL TRAY 2 is the default for all trays other than LOGICAL TRAY 1. “PHYSICAL TRAY1” / “PHYSICAL TRAY2” / PHYSICAL TRAY3

12.3.4 DUPLEX

Function	• Sets duplex printing mode.
Use	• To specify duplex printing. OFF: Duplex print is OFF LONG EDGE: Duplex print is ON, long edge SHORT EDGE: Duplex print is ON, short edge
Setting/ procedure	• The default setting is OFF. “OFF” / LONG EDGE / SHORT EDGE **NOTE** **• This menu is available only when a duplex option is installed.** **• The setting in the printer driver overrides the setting in this menu.**

12.3.5 COPIES

Function	• Sets the number of prints.
Use	• To specify the number of copies of the job to be printed.
Setting/ procedure	• The default setting is “1” copy. “1” copy to 9999 copies. **NOTE** **• The setting in the printer driver overrides the setting in this menu.**

12.3.6 COLLATE

Function	• Sets printing in sets.
Use	• To print several sets of multiple pages. ON: Print in sets. OFF: Print in page.
Setting/ procedure	• The default setting is OFF. ON / “OFF” **NOTE** **• This menu item appears only if an optional hard disk kit or a CompactFlash card of 1GB or more is installed.** **• The setting in the printer driver overrides the setting in this menu.**

12.4 QUALITY MENU

12.4.1 COLOR MODE

Function	• Sets the color mode for printing.
Use	• To specify whether jobs should be printed in color or grayscale.
Setting/ procedure	• The default setting is COLOR. “COLOR” / GRAYSCALE

12.4.2 BRIGHTNESS

Function	• Sets the brightness of the printed image.
Use	• To adjust the brightness of the printed image.
Setting/ procedure	• The default setting is 0 %. -15% / -10% / -5% / “0%” / +5% / +10% / +15%

12.4.3 HALFTONE

A. IMAGE PRINTING

Function	• Sets the halftone characteristic of image to be printed.
Use	• To set the halftone characteristic that is used for the printed image (picture.) LINE ART: HALFTONE characteristic that emphasizes the resolution of the print image. DETAIL: HALFTONE characteristic that emphasizes the balance between the resolution and the tone reproducibility of the print image. SMOOTH: HALFTONE characteristic that emphasizes the tone reproducibility of the print image.
Setting/ procedure	• The default setting is DETAIL. LINE ART / “DETAIL” / SMOOTH

B. TEXT PRINTING

Function	• Sets the halftone characteristic of the text to be printed.
Use	• To set the halftone characteristic that is used for printing text (letter). LINE ART: HALFTONE characteristic that emphasizes the resolution of the print image. DETAIL: HALFTONE characteristic that emphasizes the balance between the resolution and the tone reproducibility of the print image. SMOOTH: HALFTONE characteristic that emphasizes the tone reproducibility of the print image.
Setting/ procedure	• The default setting is LINE ART. “LINE ART” / DETAIL / SMOOTH

C. GRFX. PRINTING

Function	• Sets the halftone characteristic for graphics printing.
Use	• To set the halftone characteristic that is used for printing graphics (figures). LINE ART: HALFTONE characteristic that emphasizes the resolution of the print image. DETAIL: HALFTONE characteristic that emphasizes the balance between the resolution and the tone reproducibility of the print image. SMOOTH: HALFTONE characteristic that emphasizes the tone reproducibility of the print image.
Setting/ procedure	• The default setting is DETAIL. LINE ART / “DETAIL” / SMOOTH

12.4.4 EDGE ENHANCEMENT

A. IMAGE PRINTING

Function	• Selects whether or not to add edge enhancement during image printing.
Use	• To add edge enhancement and sharpen the outline of images when printing image data such as photographs.
Setting/ procedure	• The default setting is OFF. ON / “OFF”

B. TEXT PRINTING

Function	• Selects whether or not to add edge enhancement during text printing.
Use	• To add edge enhancement and sharpen the outline of images when printing text data such as letters.
Setting/ procedure	• The default setting is ON. “ON” / OFF

C. GRFX. PRINTING

Function	• Selects whether or not to add edge enhancement during graphic printing.
Use	• To add edge enhancement and sharpen the outline of images when printing text data such as graphics.
Setting/ procedure	• The default setting is ON. “ON” / OFF

12.4.5 EDGE STRENGTH

Function	• Sets edge strength applied to printing with edge enhancement.
Use	• To adjust edge strength depending on each image. In the order of LOW, MIDDLE, and HIGH, edge strength increases.
Setting/ procedure	• The default setting is MIDDLE. OFF / LOW / “MIDDLE” / HIGH **NOTE** **• If this setting is set to OFF, the [EDGE ENHANCEMENT] setting is disabled and jobs print without edge enhancement.**

12.4.6 ECONOMY PRINT

Function	• Selects whether or not to use the economy print mode where job prints with lower print density and less toner consumption.
Use	• To reduce toner consumption • In the economy print mode, toner consumption will be reduced by approx. 30 % compared to the normal mode.
Setting/ procedure	• The default setting is OFF. ON / "OFF" **NOTE** **• If ON is selected, the edges are not emphasized, even if [IMAGE PRINTING] and [GRFX. PRINTING] of the [EDGE ENHANCEMENT] menu item are set to ON.**

12.4.7 PCL SETTING

A. CONTRAST

Function	• Sets the contrast of a PCL printed image.
Use	• To adjust the contrast of a PCL printed image.
Setting/ procedure	• The default setting is 0%. -15% / -10% / -5% / "0%" / +5% / +10% / +15%

B. IMAGE PRINTING

(1) RGB SOURCE

Function	• Sets the RGB color space of the image to be printed.
Use	• To set the input RGB color space that is used for printing the image (picture). sRGB: Profile that has been preset to the printer. DVICE COLOR: It uses the device color in the color space.
Setting/ procedure	• The default setting is sRGB. DVICE COLOR / "sRGB"

(2) RGB INTENT

Function	• Sets the RGB characteristics of the image to be printed.
Use	• To set the color conversion characteristic from input RGB to device CMYK that is used for printing the image (picture). VIVID: Color conversion characteristic suited to the image emphasizing on color vividness. PHOTOGRAPHIC: Color conversion characteristic suited to the image emphasizing on color image.
Setting/ procedure	• The default setting is PHOTOGRAPHIC. VIVID / "PHOTOGRAPHIC"

(3) RGB GRAY

Function	• Sets the RGB gray reproduction of the image to be printed.
Use	• To set the gray print method that is used for the printed image (picture). COMPOSITE BLACK: Print gray with the toner of 4 colors CMYK. BLACK AND GRAY: Print black (R=G=B=0) only with K toner and print gray with toner of 4 colors CMYK. BLACK ONLY: Print gray only with K toner.
Setting/ procedure	• The default setting is BLACK AND GRAY. COMPOSITE BLACK / “BLACK AND GRAY” / BLACK ONLY

C. TEXT PRINTING

(1) RGB SOURCE

Function	• Sets the RGB color space of the text to be printed.
Use	• To set the input RGB color space that is used for printing text (letter). sRGB: Profile that has been preset to the printer. DVICE COLOR: It uses the device color in the color space.
Setting/ procedure	• The default setting is sRGB. DVICE COLOR / “sRGB”

(2) RGB INTENT

Function	• Sets the RGB characteristic of the text to be printed.
Use	• To set the color conversion characteristic from input RGB to device CMYK that is used for printing text (letter). VIVID: Color conversion characteristic suited to the image emphasizing on color vividness. PHOTOGRAPHIC: Color conversion characteristic suited to the image emphasizing on color image.
Setting/ procedure	• The default setting is VIVID. “VIVID” / PHOTOGRAPHIC

(3) RGB GRAY

Function	• Sets the RGB gray reproduction of the text to be printed.
Use	• To set the gray print method that is used for printing text (letter). COMPOSITE BLACK: Print gray with the toner of 4 colors CMYK. BLACK AND GRAY: Print black (R=G=B=0) only with K toner and print gray with toner of 4 colors CMYK. BLACK ONLY : Print gray only with K toner.
Setting/ procedure	• The default setting is BLACK AND GRAY. COMPOSITE BLACK / “BLACK AND GRAY” / BLACK ONLY

D. GRFX. PRINTING

(1) RGB SOURCE

Function	• Sets the RGB color space of the graphics to be printed.
Use	• To set the input RGB color space that is used for printing graphics (figures). sRGB: Profile that has been preset to the printer. DVICE COLOR: It uses the device color in the color space.
Setting/ procedure	• The default setting is sRGB. DVICE COLOR / “sRGB”

(2) RGB INTENT

Function	• Sets the RGB characteristic for graphics printing.
Use	• To set the color conversion characteristic from input RGB to device CMYK that is used for graphics (figures). VIVID: Color conversion characteristic suited to the image emphasizing on color vividness. PHOTOGRAPHIC: Color conversion characteristic suited to the image emphasizing on color image.
Setting/ procedure	• The default setting is VIVID. “VIVID” / PHOTOGRAPHIC

(3) RGB GRAY

Function	• Sets the RGB gray reproduction of the graphics to be printed.
Use	• To set the gray print method that is used for graphics (figures). COMPOSITE BLACK: Print gray with the toner of 4 colors CMYK. BLACK AND GRAY: Print black (R=G=B=0) only with K toner and print gray with toner of 4 colors CMYK. BLACK ONLY: Print gray only with K toner.
Setting/ procedure	• The default setting is BLACK AND GRAY. COMPOSITE BLACK / “BLACK AND GRAY” / BLACK ONLY

12.4.8 PS SETTING

A. IMAGE PRINTING

(1) RGB SOURCE

Function	• Sets the RGB color space of the image to be printed.
Use	• To set the input RGB color space that is used for printing the image (picture). sRGB ... BlueAdjustRGB: Profile that has been preset to the printer. DVICE COLOR: It uses the device color in the color space.
Setting/ procedure	• The default setting is sRGB. DEVICE COLOR / “sRGB” / AppleRGB / AdobeRGB1998 / ColorMatchRGB / BlueAdjustRGB / (List 1) ...

(2) RGB INTENT

Function	• Sets the RGB characteristics of the image to be printed.
Use	• To set the color conversion characteristic from input RGB to device CMYK that is used for printing the image (picture). VIVID: Color conversion characteristic suited to the image emphasizing on color vividness. PHOTOGRAPHIC: Color conversion characteristic suited to the image emphasizing on color image. RELATIVE COLOR: Reproduce the color that minimize the color difference between original and print by adjusting the basic color (white.) ABSOLUTE COLOR: Reproduce the color that maintains the absolute color within the device reproduced color.
Setting/ procedure	• The default setting is PHOTOGRAPHIC. VIVID / “PHOTOGRAPHIC” / RELATIVE COLOR / ABSOLUTE COLOR

(3) RGB GRAY

Function	• Sets the RGB gray reproduction of the image to be printed.
Use	• To set the gray print method that is processed by the printer for the printed image (picture). COMPOSITE BLACK: Print gray with the toner of 4 colors CMYK. BLACK AND GRAY: Print black (R=G=B=0) only with K toner and print gray with toner of 4 colors CMYK. BLACK ONLY: Print gray only with K toner.
Setting/ procedure	• The default setting is BLACK AND GRAY. COMPOSITE BLACK / “BLACK AND GRAY” / BLACK ONLY

(4) DESTINATION PROF

Function	• Sets the output profile.
Use	• To set the custom profile used for output. AUTO: Select automatically appropriate output profile that has been preset at the printer with other print conditions. (List 1) ...: Custom profile that has been downloaded to the printer by user.
Setting/ procedure	• The default setting is AUTO. “AUTO” / (List 1) ...

B. TEXT PRINTING

(1) RGB SOURCE

Function	• Sets the RGB color space of the text to be printed.
Use	• To set the input RGB color space that is used for printing text (letter). sRGB ... BlueAdjustRGB: Profile that has been preset to the printer. DVICE COLOR: It uses the device color in the color space.
Setting/ procedure	• The default setting is sRGB. DEVICE COLOR / “sRGB” / AppleRGB / AdobeRGB1998 / ColorMatchRGB / BlueAdjustRGB / (List 1) ...

(2) RGB INTENT

Function	• Sets the RGB characteristic of the text to be printed.
Use	• To set the color conversion characteristic from input RGB to device CMYK that is used for printing text (letter). VIVID: Color conversion characteristic suited to the image emphasizing on color vividness. PHOTOGRAPHIC: Color conversion characteristic suited to the image emphasizing on color image. RELATIVE COLOR: Reproduce the color that minimize the color difference between original and print by adjusting the basic color (white.) ABSOLUTE COLOR: Reproduce the color that maintains the absolute color within the device reproduced color.
Setting/ procedure	• The default setting is VIVID. "VIVID" / PHOTOGRAPHIC / RELATIVE COLOR / ABSOLUTE COLOR

(3) RGB GRAY

Function	• Sets the RGB gray reproduction of the text to be printed.
Use	• To set the gray print method that is used for printing text (letter). COMPOSITE BLACK: Print gray with the toner of 4 colors CMYK. BLACK AND GRAY: Print black (R=G=B=0) only with K toner and print gray with toner of 4 colors CMYK. BLACK ONLY: Print gray only with K toner.
Setting/ procedure	• The default setting is BLACK AND GRAY. COMPOSITE BLACK / "BLACK AND GRAY" / BLACK ONLY

(4) DESTINATION PROF

Function	• Sets the output profile.
Use	• To set the custom profile used for output. AUTO: Select automatically appropriate output profile that has been preset at the printer with other print conditions. (List 1) ...: Custom profile that has been downloaded to the printer by user.
Setting/ procedure	• The default setting is AUTO. "AUTO" / (List 1) ...

C. GRFX. PRINTING

(1) RGB SOURCE

Function	• Sets the RGB color space of the graphics to be printed.
Use	• To set the input RGB color space that is used for printing graphics (figures). sRGB ... BlueAdjustRGB: Profile that has been preset to the printer. DVICE COLOR: It uses the device color in the color space.
Setting/ procedure	• The default setting is sRGB. DEVICE COLOR / "sRGB" / AppleRGB / AdobeRGB1998 / ColorMatchRGB / BlueAdjustRGB / (List 1) ...

(2) RGB INTENT

Function	• Sets the RGB characteristic of the graphics to be printed.
Use	• To set the color conversion characteristic from input RGB to device CMYK that is used for printing graphics (figures). VIVID: Color conversion characteristic suited to the image emphasizing on color vividness. PHOTOGRAPHIC: Color conversion characteristic suited to the image emphasizing on color image. RELATIVE COLOR: Reproduce the color that minimize the color difference between original and print by adjusting the basic color (white.) ABSOLUTE COLOR: Reproduce the color that maintains the absolute color within the device reproduced color.
Setting/ procedure	• The default setting is VIVID. "VIVID" / PHOTOGRAPHIC / RELATIVE COLOR / ABSOLUTE COLOR

(3) RGB GRAY

Function	• Sets the RGB gray reproduction of the graphics to be printed.
Use	• To set the gray print method that is used for printing graphics (figures). COMPOSITE BLACK: Print gray with the toner of 4 colors CMYK. BLACK AND GRAY: Print black (R=G=B=0) only with K toner and print gray with toner of 4 colors CMYK. BLACK ONLY: Print gray only with K toner.
Setting/ procedure	• The default setting is BLACK AND GRAY. COMPOSITE BLACK / "BLACK AND GRAY" / BLACK ONLY

(4) DESTINATION PROF

Function	• Sets the output profile.
Use	• To set the custom profile used for output. AUTO: Select automatically appropriate output profile that has been preset at the printer with other print conditions. (List 1) ...: Custom profile that has been downloaded to the printer by user.
Setting/ procedure	• The default setting is AUTO. "AUTO" / (List 1) ...

D. SIMULATION

(1) SIMULATION PROF

Function	• Sets the simulation profile.
Use	• To set a CMYK simulation profile at implementation of the simulation. SWOP ... DIC: Profile that has been preset at the printer. (List 1) ...: Custom profile that has been downloaded to the printer by users.
Setting/ procedure	• The default setting is NONE. "NONE" / SWOP / Euroscale / CommercialPress / TOYO / DIC / (List 1)...

(2) SIM. INTENT

Function	• Sets the color characteristics.
Use	• To set the color characteristics at the implementation of the simulation. RELATIVE COLOR: Reproduce the color that minimizes the color difference between original and print by adjusting the basic color (white.) ABSOLUTE COLOR: Reproduce the color that maintains the absolute color within the device reproduced color.
Setting/ procedure	• The default setting is RELATIVE COLOR. "RELATIVE COLOR" / ABSOLUTE COLOR

(3) CMYK GRAY

Function	• Sets CMYK gray reproduction.
Use	• To set the CMYK data K maintain method at the implementation of the simulation. COMPOSITE BLACK: Print according to the result of color conversion with profile. BLACK AND GRAY: Print by maintaining the value only for black (C=M=Y=0, K=255) BLACK ONLY: Print by maintaining the value only for gray (C=M=Y=0, K=any)
Setting/ procedure	• The default setting is COMPOSITE BLACK. "COMPOSITE BLACK" / BLACK AND GRAY / BLACK ONLY

12.4.9 CALIBRATION

A. TONE CALIBRATION

Function	• Sets the gradation adjustment (Image stabilization with the controller).
Use	• To use for a particular calibration made by users. ON: Gradation adjustment is ON. OFF: Gradation adjustment is OFF.
Setting/ procedure	• The default setting is ON. "ON" / OFF

B. CMYK DENSITY

(1) CYAN

Function	• Sets the cyan level for the HIGHLIGHT, MIDDLE, and SHADOW area respectively.
Use	• To set the cyan level for the HIGHLIGHT, MIDDLE, and SHADOW are respectively.
Setting/ procedure	• The default setting is 0. -3 to +3

(2) MAGENTA

Function	• Sets the magenta level for the HIGHLIGHT, MIDDLE, and SHADOW area respectively.
Use	• To set the magenta level for the HIGHLIGHT, MIDDLE, and SHADOW are respectively.
Setting/ procedure	• The default setting is 0. -3 to +3

(3) YELLOW

Function	• Sets the yellow level for the HIGHLIGHT, MIDDLE, and SHADOW area respectively.
Use	• To set the yellow level for the HIGHLIGHT, MIDDLE, and SHADOW are respectively.
Setting/ procedure	• The default setting is 0. -3 to +3

(4) BLACK

Function	• Sets the black level for the HIGHLIGHT, MIDDLE, and SHADOW area respectively.
Use	• To set the black level for the HIGHLIGHT, MIDDLE, and SHADOW are respectively.
Setting/ procedure	• The default setting is 0. -3 to +3

C. COLOR SEPARATION

Function	• Sets the color separation function.
Use	• To create color separations.
Setting/ procedure	• The default setting is OFF. ON / “OFF”

12.5 SYS DEFAULT MENU

12.5.1 EMULATION

A. DEF. EMULATION

Function	• To set the PDL (Page Description Language).
Use	• To fix the PDL as necessary. It usually switches automatically.
Setting/ procedure	• The default setting is AUTO. “AUTO” / POSTSCRIPT / PCL

B. POSTSCRIPT

(1) WAIT TIMEOUT

Function	• Sets the amount of time to wait for a postscript file.
Use	• To set the amount of time to wait for a postscript file before the print job times out.
Setting/ procedure	• The default setting is 0. “0” second to 300 seconds.

(2) PS ERROR PAGE

Function	• Specifies whether error pages are printed at the time of a postscript error.
Use	• To specify whether error pages are printed after a postscript error occurs. ON: Error pages are printed at the time of postscript error. OFF: Error pages are not printed at the time of postscript error.
Setting/ procedure	• The default setting is OFF. ON / “OFF”

(3) PS PROTOCOL

Function	• Sets the protocol to be used for postscript printing.
Use	• To use the protocol when printing by postscript printing. AUTO: Automatic recognition NORMAL: ASCII letter code data BINARY: Binary data
Setting/ procedure	• The default setting is AUTO. "AUTO" / NORMAL / BINARY

C. PCL

(1) CR/LF MAPPING

Function	• Sets the linefeed code for PCL printing.
Use	• To specify the type of linefeed to be used for PCL printing.
Setting/ procedure	• The default setting is "CR=CR LF=LF." "CR=CR LF=LF" / CR=CRLF LF=LF / CR=CR LF=LFCR / CR=CRLF LF=LFCR

(2) LINES PER PAGE

Function	• Sets the lines per page for PCL printing.
Use	• To set the number of lines to be printed per page for PCL jobs.
Setting/ procedure	• The default setting is 60. 5 to 128 (1 step)

(3) FONT SOURCE

<FONT NUMBER>

Function	• Sets the PCL font to be used for PCL printing.
Use	• To set the font to be used for printing PCL jobs.
Setting/ procedure	• The default setting is 0. "0" to 102 (1 step) **NOTE** • **According to the selected [FONT NUMBER], [PITCH SIZE] or [POINT SIZE] setting is available.** • **Details on the font which corresponds to the font No. can be checked by the PCL font list.** See P.126

<PITCH SIZE (POINT SIZE)>

Function	• Sets the pitch size (point size) of the PCL font for PCL printing.
Use	• To set the pitch size (point size) of the font to be used for printing PCL jobs.
Setting/ procedure	<PITCH SIZE> • The default setting is 10.00. <POINT SIZE> • The default setting is 12.00. <PITCH SIZE> 0.44 to 99.99 (0.01 step) <POINT SIZE> 4.00 to 999.75 (0.01 step)

<SYMBOL SET>

Function	• Sets the symbol set for PCL printing.
Use	• To set the symbol set to be used for printing PCL jobs.
Setting/ procedure	• The default setting is PC8. "PC8" / DESKTOP / ISO4 / ISO6 / ISO11 / ISO15 / ISO17 / ISO21 / ISO60 / ISO69 / ISOL1 / ISOL2 / ISOL5 / ISOL6 / ISOL9 / LEGAL / MATH8 / MCTEXT / MSPUBL / PC775 / PC850 / PC852 / PC858 / PC8DN / PC8TK / PC1004 / PIFONT / PSMATH / PSTEXT / ROMAN8 / WIN30 / WINBALT / WINL1 / WINL2 / WINL5 / ARABIC8 / HPWARA / PC864ARA / HEBREW7 / HEBREW8 / ISOHEB / PC862HEB / ISOCYR / PC866CYR / WINCYR / PC866UKR / GREEK8 / WINGRK / PC851GRK / PC8GRK / ISOGRK

D. XPS
(1) DIGITAL SGN.

Function Use	• Selects whether to verify digital signatures attached to XPS (XML Paper Specification) files when printing the files. • When ON is selected, files with invalid digital signatures are not printed.
Setting/ procedure	• The default setting is DISABLE. ENABLE / "DISABLE"

(2) XPS ERROR PAGE

Function Use	• To set whether to print error information when an error occurs while printing a XPS use file. ON: XPS error page is printed when an XPS error occurs. OFF: No XPS error page is printed when an XPS error occurs.
Setting/ procedure	• The default setting is ON. "ON" / OFF

12.5.2 PAPER

A. DEFAULT PAPER
(1) PAPER SIZE

Function	• Sets the default media size.
Use	• To set the default media size.
Setting/ procedure	<For North America> • The default setting is LETTER. <For other destinations> • The default setting is A4. LETTER / LEGAL / EXECUTIVE / A4 / A5 / A6 / B5(JIS) / B6(JIS) / GOVT LETTER / STATEMENT / FOLIO / SP FOLIO / UK QUARTO / FOOLSCAP / GOVT LEGAL / 16K / PHOTO 4x6 / KAI 16 / KAI 32 / ENV C6 / ENV DL / ENV MONARCH / ENV CHOU#3 / ENV CHOU#4 / B5(ISO) / ENV #10 / JPOST 100x148 / JPOST-D 148x200 / CUSTOM **NOTE** • **PHOTO 10x15 is available for selection instead of PHOTO 4x6, if the following function is set to "METRIC": [ADMIN. MANAGEMENT] - [USER SETTING] - [PRE-SET ZOOM].**

(2) CUSTOM SIZE

Function	• Sets the custom media width and length.
Use	• To set the width and length of the custom media size.
Setting/ procedure	<For North America> • The default setting of WIDTH is 8.50 inches. 3.63 inches to “8.50 inches” • The default setting of LENGTH is 11.00 inches. 5.83 inches to 14.00 inches” <For other destinations> • The default setting of WIDTH is 210 mm. 92 mm to 216 mm • The default setting of LENGTH is 297 mm. 148 mm to 356 mm

(3) PAPER TYPE

Function	• Sets the default media type.
Use	• To set the default media type.
Setting/ procedure	• The default setting is PLAIN PAPER. “PLAIN PAPER” / RECYCLED / THICK 1 / THICK 2 / LABEL / TRANSPARENCY / ENVELOPE / POSTCARD / LETTERHEAD / GLOSSY 1 / GLOSSY 2

12.5.3 GRAYSCALE PAGE

Function	• Sets the color mode (color or monochrome) applied to monochrome pages included in a color print job. AUTO: Automatically determines color or monochrome from the job’s first page. GRAYSCALE PRINT: Automatically determines color or monochrome on a job's page basis. COLOR PRINT: Always makes color printing for a job where it selected color print.
Use	
Setting/ procedure	• The default setting is AUTO. “AUTO” / GRAYSCALE PRINT / COLOR PRINT

12.5.4 STARTUP OPTIONS

A. DO STARTUP PAGE

Function	• Sets whether a startup page is printed at startup of the printer.
Use	• To specify whether a startup page is printed. ON: Start up page is printed at startup the printer. OFF: Start up page is not printed at startup of the printer.
Setting/ procedure	• The default setting is OFF. ON / “OFF”

12.5.5 HOLD JOB TIMEOUT

Function	• Sets the amount of time before a job saved temporarily in the printer is automatically deleted.
Use	• To change the amount of time a job is held before being deleted.
Setting/ procedure	• The default setting is DISABLE. "DISABLE" / 1 hour / 4 hours / 1 day / 1 week **NOTE** **• This menu is available only when an optional hard disk kit is installed.**

12.5.6 HDD FORMAT

Function	• Initializes the format of the optional hard disk kit.
Use	• To initialize the format of the optional hard disk kit. USER AREA ONLY: Initialize only user area ALL: Initialize all area
Setting/ procedure	• The default setting is USER AREA ONLY. "USER AREA ONLY" / ALL **NOTE** **• This menu is available only when an optional hard disk kit is installed.**

12.5.7 CARD FORMAT

Function	• Initializes the format of the optional compact flash card.
Use	• To initialize the format of the optional compact flash card. USER AREA ONLY: Initialize only user area ALL: Initialize all area
Setting/ procedure	• The default setting is USER AREA ONLY. "USER AREA ONLY" / ALL **NOTE** **• This menu is available only when an optional compact flash card is installed.**

13. User service mode

13.1 User service mode function tree

A. Procedure

1. On the initial screen, press the Select key to call [MACHINE SETTING] to the screen.
2. Keep on pressing ◀ key over two seconds.

B. Exiting

- Press the Stop/Reset key.

MAINTENANCE			Ref. page
FAX MAINTENANCE	TX SPEED		P.187
	RX SPEED		
	TX LEVEL		
	RX LEVEL		
	DTMF LEVEL		
	CNG LEVEL		
	CED LEVEL		
	ECM MODE		
	CODING SCHEME		
	TONER EMPTY REPORT		
	PROTOCOL REPORT		
	TWAIN TIMEOUT		
	ENERGY SAVE MODE		
ADJUST	TOP ADJUSTMENT	PLAIN PAPER	P.187
		THICK	
		ENVELOPE	
		TRANSPARENCY	
	LEFT ADJ. (FRONT)	TRAY1	P.187
		TRAY2	
		TRAY3	
	LEFT ADJ. (BACK)	TRAY1	P.187
		TRAY2	
		TRAY3	

MAINTENANCE				Ref. page
	TRANSFER POWER	SIMPLEX PASS	PLAIN PAPER	P.187
			TRANSPAR-ENCY	
			THICK1	
			THICK2	
			POSTCARD	
			ENVELOPE	
			LABEL	
			GLOSSY1	
			GLOSSY2	
		DUPLEX PASS	PLAIN PAPER	
		MANUAL DUPLEX	PLAIN PAPER	P.187
			THICK1	
			THICK2	
			POSTCARD	
			ENVELOPE	
			LABEL	
			GLOSSY1	
			GLOSSY2	
AIDC MODE				P.187
CRU USAGE	TRANSFER BELT			P.187
	FUSER UNIT			P.187
	TRANSFER ROLLER			P.187
SUPPLIES REPLACE	TRANSFER BELT			P.187
	FUSER UNIT			
	TRANSFER ROLLER			
MAINTEN. MENU	PRINT MENU	EVENT LOG		P.188
		HALFTONE 64	CYAN64	P.188
			MAGENTA64	
			YELLOW64	
			BLACK64	
		HALFTONE128	CYAN128	P.188
			MAGENTA128	
			YELLOW128	
			BLACK128	
		HALFTONE256	CYAN256	P.188
			MAGENTA256	
			YELLOW256	
			BLACK256	
		GRADATION		P.188

MAINTENANCE			Ref. page
	IMG ADJ THICK	CYAN	P.189
		MAGENTA	
		YELLOW	
		BLACK	
	IMG ADJ BLACK		P.189

13.2 FAX MAINTENANCE

See P.195

13.3 ADJUST

13.3.1 TOP ADJUSTMENT

See P.206

13.3.2 LEFT ADJ. (FRONT)

See P.206

13.3.3 LEFT ADJ. (BACK)

See P.206

13.3.4 TRANSFER POWER

See P.207

13.4 AIDC MODE

See P.210

13.5 CRU USAGE

13.5.1 TRANSFER BELT

Function	• Displays the remaining life of the transfer belt.
Use	• To check the remaining life of the maintenance service parts.

13.5.2 FUSER UNIT

Function	• Displays the remaining life of the fusing unit.
Use	• To check the remaining life of the maintenance service parts.

13.5.3 TRANSFER ROLLER

Function	• Displays the remaining life of the transfer roller.
Use	• To check the remaining life of the maintenance service parts.

13.6 SUPPLIES REPLACE

See P.210

13.7 MAINTENANCE MENU

13.7.1 PRINT MENU

A. EVENT LOG

Function	• Prints the event log.
Use	• To check the jams/troubles that occurred, and history of replacing the consumables, etc. The items that can be checked are as follows.
Setting/ procedure	*1.* Call the user service mode to the display. *2.* Select [PRINT MENU] → [EVENT LOG] and press the Select key. *3.* Select [PRINT] and press the Select key.

B. HALFTONE 64

Function	• Prints the halftone pattern with 25% level for CMYK respectively.
Use	• To check the unevenness of the density and the pitch.
Setting/ procedure	*1.* Call the user service mode to the display. *2.* Select [PRINT MENU] → [HALFTONE 64] and press the Select key. *3.* Select desired color with the up key ▲/down key ▼ and press the Select key. *4.* Select [PRINT] and press the Select key.

C. HALFTONE 128

Function	• Prints the halftone pattern with 50% level for CMYK respectively.
Use	• To check the unevenness of the density and the pitch.
Setting/ procedure	*1.* Call the user service mode to the display. *2.* Select [PRINT MENU] → [HALFTONE 128] and press the Select key. *3.* Select desired color with the up key ▲/down key ▼ and press the Select key. *4.* Select [PRINT] and press the Select key.

D. HALFTONE 256

Function	• Prints the halftone pattern with 100% level for CMYK respectively.
Use	• To check the unevenness of the density and the pitch.
Setting/ procedure	*1.* Call the user service mode to the display. *2.* Select [PRINT MENU] → [HALFTONE 256] and press the Select key. *3.* Select desired color with the up key ▲/down key ▼ and press the Select key. *4.* Select [PRINT] and press the Select key.

E. GRADATION

Function	• Prints the gradation pattern.
Use	• To check the gradation reproductively.
Setting/ procedure	*1.* Call the user service mode to the display. *2.* Select [GRADATION] and press the Select key. *3.* Select [PRINT] and press the Select key.

13.7.2 IMG ADJ THICK

Function	• To fine-adjust density of printed images of each color for thick paper and OHP transparencies.
Use	• To change the density of the printed image for each color with thick paper and OHP transparencies.
Adjustment Instructions	• Light color: increase the setting value • Dark color: decrease the setting value
Setting/ procedure	• The default setting is 0. -5 to +5 *1.* Call the user service mode to the display. *2.* Select [IMG ADJ THICK] and press the Select key. *3.* Select desired color with the up key ▲/down key ▼ and press the Select key. *4.* Select desired setting value with the up key ▲/down key ▼ and press the Select key.

13.7.3 IMG ADJ BLACK

Function	• To fine-adjust the density of the printed image for a black printing.
Use	• To vary the density of the printed image of a black printing.
Adjustment Instructions	• If the black is light, increase the setting value. • If the black is dark, decrease the setting value.
Setting/ procedure	• The default setting is 0. -2 to +2 *1.* Call the user service mode to the display. *2.* Select [IMG ADJ BLACK] and press the Select key. *3.* Select desired setting value with the up key ▲/down key ▼ and press the Select key.

14. SERVICE MODE

14.1 SERVICE MODE entry procedure

NOTE

- **Ensure appropriate security for the Service Mode entry procedure. It should NEVER be given to any unauthorized person.**

A. Procedure

1. On the initial screen, press the Select key to call [PAPER SELECT] to the screen.
2. Press the following keys in this order.
   Stop/Reset → 0 → 0 → Stop/Reset → 0 → 1

B. Exiting

- Press the Stop/Reset key.

14.2 SERVICE MODE function tree

- The function tree is shown to comply with the format displayed on the screen.
- <*1>: This function becomes available only when the optional tray3 is mounted on the machine.

SERVICE MODE			Ref. page
SERVICE'S CHOICE	TX SPEED		P.195
	RX SPEED		P.195
	TX LEVEL		P.195
	RX LEVEL		P.195
	DTMF LEVEL		P.195
	CNG LEVEL		P.196
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	ECM MODE		P.196
	CODING SCHEME		P.196
	TONER EMPTY REPORT		P.197
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	ENERGY SAVE MODE		P.198
	ENABLE WARNING	TONER LOW	P.198
		I-UINT LOW	P.198

SERVICE MODE				Ref. page
ADJUST	CCD MAIN ZOOM			P.199
	CCD SUB ZOOM			P.200
	CCD MAIN REGIST			P.201
	CCD SUB REGIST			P.202
	ADF 1ST SUB ZOOM			P.203
	ADF 1ST MAIN REG			P.203
	ADF 1ST SUB REG			P.204
	ADF 2ND SUB ZOOM			P.204
	ADF 2ND MAIN REG			P.204
	ADF 2ND SUB REG			P.205
	ADF LOOP			P.205
	FLICKER			P.205
	TOP ADJUSTMENT	PLAIN PAPER		P.206
		THICK		
		ENVELOPE		
		TRANSPARENCY		
	LEFT ADJ. (FRONT)	TRAY1		P.206
		TRAY2		
		TRAY3 <*1>		
	LEFT ADJ. (BACK)	TRAY1		P.206
		TRAY2		
		TRAY3 <*1>		
	TRANSFER POWER	SIMPLEX PASS	PLAIN PAPER	P.207
			TRANSPARENCY	
			THICK1	
			THICK2	
			POSTCARD	
			ENVELOPE	
			LABEL	
			GLOSSY1	
			GLOSSY2	
		DUPLEX PASS	PLAIN PAPER	P.207
		MANUAL DUPLEX	PLAIN PAPER	P.207
			THICK1	
			THICK2	
			POSTCARD	
			ENVELOPE	
			LABEL	
			GLOSSY1	
			GLOSSY2	

SERVICE MODE			Ref. page
	IMG ADJ THICK	CYAN	P.208
		MAGENTA	
		YELLOW	
		BLACK	
	IMG ADJ BLACK		P.208
	IMAGE ADJ PARAM		P.208
	MAXIMUM DENSITY	CYAN	P.209
		MAGENTA	
		YELLOW	
		BLACK	
	FUSER SPEED	HIGH SPEED	P.209
		LOW SPEED	P.209
	TEMPERATURE	PLAIN PAPER	P.210
		TRANSPARENCY	
		THICK	
		ENVELOPE	
	AIDC MODE		P.210
	SUPPLIES REPLACE	TRANSFER BELT	P.210
		FUSER UNIT	P.210
		TRANSFER ROLLER	P.211
	BK CLEAR		P.211
COUNTER	TOTAL PRINT		P.211
	FAX COUNTER		P.212
	SCAN COUNTER		P.212
	TRAY COUNTER		P.212
	PAPER SIZE COUNTER		P.212
	PAPER TYPE COUNTER		P.213
	APPLICATION COUNT.		P.213
	SUPPLIES STATUS		P.213
	CRU USAGE		P.213
	JAM COUNTER		P.214
	TROUBLE COUNTER		P.214
DISPLAY	MAIN F/W VER.		P.214
	ENGINE F/W VER.		P.214
	MAIN RAM SIZE		P.214
	SERIAL NO.		P.214
	PP F/W VER.		P.214
	PP BOOT VER.		P.214
	PRINTER RAM SIZE		P.215
	HARD DISK		P.215
	CARD		P.215

SERVICE MODE				Ref. page
FUNCTION	PAPER FEED TEST	TRAY1		P.216
		TRAY2		
		TRAY3 <*1>		
	PRN TEST PATTERN	TRAY1	PATTERN1	P.216
			PATTERN2	
		TRAY2	PATTERN1	
			PATTERN2	
		TRAY3 <*1>	PATTERN1	
			PATTERN2	
	ADF FEED TEST	1-SIDED		P.217
		2-SIDED		
	COPY ADF GLASS			P.217
	FAX RES. COPY TEST			P.217
	SCAN TEST			P.217
	PRINTER TEST	SENSOR		P.218
		ELECTRIC PARTS		P.219
		PRINT TEST		P.220
	ADF TEST	SENSOR		P.220
		ELECTRIC PARTS		P.220
SOFT SWITCH				P.221
REPORT	SERVICE DATA LIST			P.221
	ERROR CODE LIST			P.224
	T.30 PROTOCOL LIST			P.225
ADMIN. REGISTRATION				P.227
FIXED ZOOM CHANGE	REDUCTION2			P.227
	REDUCTION1			
	EXPANSION1			
	EXPANSION2			
FACTORY TEST	SIGNAL TEST			P.227
	RELAY TEST			
	SENSOR TEST			
	DIAL TEST			
	VOLUME TEST			
	PANEL BUZZER TEST			
	RAM TEST			
CLEAR DATA	SRAM CLEAR			P.228
	MEMORY CLEAR			P.228
PS/PCL	PRINT MENU	MAINTENANCE INFO		P.229
		EVENT LOG		P.231
		ELEMENT PAGE		P.231

SERVICE MODE				Ref. page
		HALFTONE 64	CYAN64	P.235
			MAGENTA64	
			YELLOW64	
			BLACK64	
		HALFTONE 128	CYAN128	P.235
			MAGENTA128	
			YELLOW128	
			BLACK128	
		HALFTONE 256	CYAN256	P.235
			MAGENTA256	
			YELLOW256	
			BLACK256	
		GRADATION		P.235
	SOFT SWITCH			P.236

14.3 SERVICE'S CHOICE

14.3.1 TX SPEED

Function / Use	• Transmit start speed setting. Choose the mode from among the following.
Setting/ procedure	• The default setting is V.34 33600bps. "V.34": "33600", 31200, 28800, 26400, 24000, 21600, 19200, 16800 V.17: 14400, 12000, 9600, 7200 V.29: 9600, 7200 V.27: 4800, 2400

14.3.2 RX SPEED

Function / Use	• Reception start speed setting. Choose the mode from among the following.
Setting/ procedure	• The default setting is V.34 33600bps. "V.34": "33600", 31200, 28800, 26400, 24000, 21600, 19200, 16800 V.17: 14400, 12000, 9600, 7200 V.29: 9600, 7200 V.27: 4800, 2400

14.3.3 TX LEVEL

Function / Use	• PSK/FSK signal output level.
Setting/ procedure	• The default setting is -9 dBm. -17 to -10 dBm "-9 dBm" -8 to -2 dBm

14.3.4 RX LEVEL

Function / Use	• Reception sensitivity level.
Setting/ procedure	• The default setting is -43 dBm. -49 to -44 dBm "-43 dBm" -42 to -36 dBm

14.3.5 DTMF LEVEL

Function / Use	• Dual tone output level.
Setting/ procedure	• The default setting is -9 dBm. -17 to -10 dBm "-9 dBm" -8 to -2 dBm

14.3.6 CNG LEVEL

Function Use	• Calling tone output level.
Setting/ procedure	• The default setting is -11 dBm. -17 to -12 dBm "-11 dBm" -10 to -2 dBm

14.3.7 CED LEVEL

Function Use	• Answer tone output level.
Setting/ procedure	• The default setting is -11 dBm. -17 to -12 dBm "-11 dBm" -10 to -2 dBm

14.3.8 ECM MODE

Function Use	• Select error correction mode.
Setting/ procedure	• The default setting is ON. "ON": When an error occurs during communication, re-send the frame where the error occurs. OFF: Any error is ignored during communication.

14.3.9 CODING SCHEME

Function Use	• Select compression method in TX/ RX mode.
Setting/ procedure	• The default setting is JBIG. MMR: A compression method. MR: A compression method. MH: The simplest compression method. "JBIG": The most complex compression method that generates the smallest code than any of following ones.

14.3.10 TONER EMPTY REPORT

Function / Use	• Select to generate a report to a specific destination when toner empty status occurs in the engine.
Setting/ procedure	• The default setting is OFF. ON: Generate a report to report destination. "OFF": Not to generate report. • If "ON" is selected, select generate report and send to remote side when toner runs out. • Enter the telephone number for which the report is to be produced. • Fax number specifications: An up-to-20-digit number that may consist of [0-9], [*], [#], [pause], and [space]. (0-9, #, *, pause, _) • The report will generate after 20 minutes, 24 hours, 48 hours, or 72 hours after the event has occurred or until the condition is gone.

A. Toner empty report (example)

SERVICE REPORT

NAME:ABC 123
TEL:1234567
DATE: Jun 10.2008 15:12

The Fax's following conditions were appears, the machine may be can not work correctly, the Fax already send a report to your dealer automatically. They will contact with you soon.

Toner Cartridge Cyan	: Empty
Toner Cartridge Magenta	: Full
Toner Cartridge Yellow	: Full
Toner Cartridge Black	: Full

A0FDF3C500DA

14.3.11 PROTOCOL REPORT

Function / Use	• Print communication report. • Choose one from among the following.
Setting/ procedure	• The default setting is OFF. "OFF": Disable T.30 communication report. ON: Print T.30 communication report. ON (ERROR): Print T.30 communication report when an error occurs.

14.3.12 TWAIN TIMEOUT

Function / Use	• To specify the time for TWAIN time out.
Setting/ procedure	• The default setting is 6 min. 2min 4min "6min" 8min 10min 12min 14min 16min 18min

14.3.13 ENERGY SAVE MODE

Function Use	• Set weather to activate Energy Save mode when print job receiving or panel operation have not been made for a given period.
Setting/ procedure	• The default setting is ON. "ON" OFF

14.3.14 ENABLE WARNING

A. TONER LOW

Function Use	• Specifies whether or not a warning appears when the toner is about to run out.
Setting/ procedure	• The default setting is ON. "ON" OFF

B. I-UNIT LOW

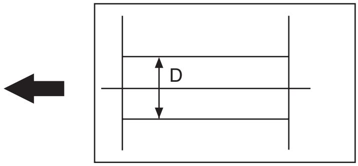
Function Use	• Specifies whether or not a warning appears when the print unit is about to reach the end of its service life.
Setting/ procedure	• The default setting is ON. "ON" OFF

14.4 ADJUST

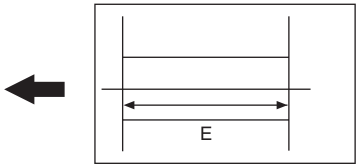
- Different adjust items are applicable and the corresponding adjust values become valid according to the specific sub-function of the main function (Copy, Fax, Twain, or NetScan) as detailed below.

	Function											
	Copy			Fax			Twain			NetScan		
Adjust item	CCD	ADF 1st	ADF 2nd	CCD	ADF 1st	ADF 2nd	CCD	ADF 1st	ADF 2nd	CCD	ADF 1st	ADF 2nd
CCD MAIN ZOOM	O	O	O	O	O	O	X	X	X	X	X	X
CCD SUB ZOOM	O	X	X	O	X	X	X	X	X	X	X	X
CCD MAIN REGIST	O	X	X	O	X	X	O	X	X	O	X	X
CCD SUB REGIST	O	X	X	O	X	X	O	X	X	O	X	X
ADF 1ST SUB ZOOM	X	O	X	X	O	X	X	X	X	X	X	X
ADF 1ST MAIN REG	X	O	X	X	O	X	X	O	X	X	O	X
ADF 1ST SUB REG	X	O	X	X	O	X	X	O	X	X	O	X
ADF 2ND SUB ZOOM	X	X	O	X	X	O	X	X	X	X	X	X
ADF 2ND MAIN REG	X	X	O	X	X	O	X	X	O	X	X	O
ADF 2ND SUB REG	X	X	O	X	X	O	X	X	O	X	X	O
ADF LOOP	X	X	O	X	X	O	X	X	O	X	X	O

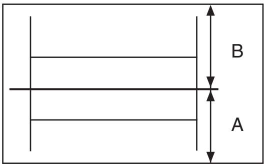
14.4.1 CCD MAIN ZOOM

Function	• To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning zoom ratio in the main scanning direction.
Use	• When the scanner unit has been replaced
Adjustment Specification	• Adjust the width of D in the copy of the test pattern1 so that the following specification is met. • 100 ± 0.5% (Zoom Ratio = Full Size:100%)  4139F3C548DA
Adjustment Range	• The default setting is 0%. • -2.0% ~ “0%” ~ +2.0% • Step: 0.2%
Setting/ Procedure	*1.* Print the test pattern1. See P.216 *2.* Enter the [ADJUST] menu in the service mode. *3.* Select [CCD MAIN ZOOM] of [ADJUST] and press the Select key. *4.* Place the test pattern1 on the Original Glass and make a test copy. **NOTE** • **The test pattern1 should be positioned vertically.** • **Use A4 or Letter paper loaded into tray1 to make the test copy.** *5.* Check that the width of D in the copy of the test pattern1 meets the specification. Calculation: (1 - Width of D in the document ÷ Width of D in the copy) × 100 If the width of D is out of specification, adjust it according to the following procedure. *6.* Press the Select key. *7.* Using the ▲/▼ key, change the setting value and then press the Select key. *8.* Place the test pattern1 on the Original Glass. Then, make a test copy again and check it.
Adjustment Instructions	• If the width of D in the test pattern is longer than the specified width ..... Decrease the setting. • If the width of D in the test pattern is shorter than the specified width ..... Increase the setting.

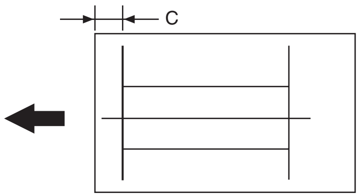
14.4.2 CCD SUB ZOOM

Function	• To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning zoom ratio in the sub-scanning direction.
Use	• When the Scanner unit has been replaced
Adjustment Specification	• Adjust the width of E in the copy of the test pattern1 so that the following specification is met. • 200 ± 0.5% (Zoom Ratio = Full Size:100%)  4139F3C549DA
Adjustment Range	• The default setting is 0%. • -2.0% ~ "0%" ~ +2.0% • Step: 0.2%
Setting/ Procedure	*1.* Print the test pattern1. See P.216 *2.* Enter the [ADJUST] menu in the service mode. *3.* Select [CCD SUB ZOOM] of [ADJUST] and press the Select key. *4.* Place the test pattern1 on the Original Glass and make a test copy. **NOTE** • **The test pattern1 should be positioned vertically.** • **Use A4 or Letter paper loaded into tray1 to make the test copy.** *5.* Check that the width of E in the copy of the test pattern1 meets the specification. Calculation: (1 - Width of E in the document ÷ Width of E in the copy) × 100 If the width of E is out of specification, adjust it according to the following procedure. *6.* Press the Select key. *7.* Using the ▲/▼ key, change the setting value and then press the Select key. *8.* Place the test pattern1 on the Original Glass. Then, make a test copy again and check it.
Adjustment Instructions	• If the width of E in the test pattern is longer than the specified width ..... Decrease the setting. • If the width of E in the test pattern is shorter than the specified width ..... Increase the setting.

14.4.3 CCD MAIN REGIST

Function	• To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning start position in the main scanning direction.
Use	• When the original glass is replaced. • When the Scanner unit has been replaced **NOTE** • **After the [CCD MAIN ZOOM] adjustments have been performed**
Adjustment Specification	• Adjust the amount that widths A and B in the copy of the test pattern1 so that the following specification is met. • 0 ± 2.0 mm  4139F3C546DA
Adjustment Range	• The default setting is 0. • -5.0 (-5.0 mm) ~ "0.0 (0.0 mm)" ~ +5.0 (+5.0 mm) • Step: 0.5 mm
Setting/ Procedure	*1.* Print the test pattern1. See P.216 *2.* Enter the [ADJUST] menu in the service mode. *3.* Select [CCD MAIN REGIST] of [ADJUST] and press the Select key. *4.* Place the test pattern1 on the Original Glass and make a test copy. **NOTE** • **The test pattern1 should be positioned vertically.** • **Use A4 or Letter paper loaded into tray1 to make the test copy.** *5.* Check the amount that widths A and B in the copy of the test pattern are shifted. If the shift is out of specification, adjust it according to the following procedure. *6.* Press the Select key. *7.* Using the ▲/▼ key, change the setting value and then press the Select key. *8.* Place the test pattern1 on the Original Glass. Then, make a test copy again and check it.
Adjustment Instructions	• If the width of A is less than the width of B..... Increase the setting. • If the width of B is less than the width of A..... Decrease the setting.

14.4.4 CCD SUB REGIST

Function	• To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning start position in the sub-scanning direction.
Use	• When the original glass is replaced. • When the Scanner unit has been replaced **NOTE** • **After the [CCD SUB ZOOM] adjustments have been performed**
Adjustment Specification	• Adjust the width of C in the copy of the test pattern1 so that the following specification is met. • 20 ± 2.5 mm  4139F3C547DA
Adjustment Range	• The default setting is 0. • -5.0 (-5.0 mm) ~ "0 (0 mm)" ~ +5.0 (+5.0 mm) • Step: 0.5 mm
Setting/ Procedure	1. Print the test pattern1. See P.216 2. Enter the [ADJUST] menu in the service mode. 3. Select [CCD SUB REGIST] of [ADJUST] and press the Select key. 4. Place the test pattern1 on the Original Glass and make a test copy. **NOTE** • **The test pattern1 should be positioned vertically.** • **Use A4 or Letter paper loaded into tray1 to make the test copy.** 5. Check that the width of C in the copy of the test pattern are shifted. If the width of C is out of specification, adjust it according to the following procedure. 6. Press the Select key. 7. Using the ▲/▼ key, change the setting value and then press the Select key. 8. Place the test pattern1 on the Original Glass. Then, make a test copy again and check it.
Adjustment Instructions	• If the width of C in the test pattern is longer than the specified width ..... Increase the setting. • If the width of C in the test pattern is shorter than the specified width ..... Decrease the setting.

14.4.5 ADF 1ST SUB ZOOM

Function	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning zoom ratio in the sub-scanning direction (1-side) when using the Automatic Document Feeder.
Use	• When the original glass is replaced. • When a new Auto Document Feeder Unit is mounted **NOTE** • **After the [CCD SUB ZOOM] adjustments have been performed**
Adjustment Range	See P.17 of the Auto Document Feeder Unit service manual.
Setting/ Procedure	
Adjustment Instructions	

14.4.6 ADF 1ST MAIN REG

Function	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the main scanning direction (1-side) when using the Automatic Document Feeder.
Use	• When the original glass is replaced. • When a new Auto Document Feeder Unit is mounted **NOTE** • **After the [CCD SUB ZOOM] adjustments have been performed** • **After the [ADF 1ST SUB ZOOM] adjustments have been performed**
Adjustment Range	See P.18 of the Auto Document Feeder Unit service manual.
Setting/ Procedure	
Adjustment Instructions	

14.4.7 ADF 1ST SUB REG

Function	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the sub-scanning direction (1-side) when using the Automatic Document Feeder.
Use	• When the original glass is replaced. • When a new Auto Document Feeder Unit is mounted **NOTE** • **After the [CCD SUB ZOOM] adjustments have been performed** • **After the [ADF 1ST SUB ZOOM] adjustments have been performed**
Adjustment Range	See P.19 of the Auto Document Feeder Unit service manual.
Setting/ Procedure	
Adjustment Instructions	

14.4.8 ADF 2ND SUB ZOOM

Function	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning zoom ratio in the sub-scanning direction (2-side) when using the Automatic Document Feeder.
Use	• When the original glass is replaced. • When a new Auto Document Feeder Unit is mounted **NOTE** • **After the [CCD SUB ZOOM] adjustments have been performed**
Adjustment Range	See P.20 of the Auto Document Feeder Unit service manual.
Setting/ Procedure	
Adjustment Instructions	

14.4.9 ADF 2ND MAIN REG

Function	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the main scanning direction (2-side) when using the Automatic Document Feeder.
Use	• When the original glass is replaced. • When a new Auto Document Feeder Unit is mounted **NOTE** • **After the [CCD SUB ZOOM] adjustments have been performed** • **After the [ADF 1ST SUB ZOOM] adjustments have been performed**
Adjustment Range	See P.21 of the Auto Document Feeder Unit service manual.
Setting/ Procedure	
Adjustment Instructions	

14.4.10 ADF 2ND SUB REG

Function	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the sub-scanning direction (2-side) when using the Automatic Document Feeder.
Use	• When the original glass is replaced. • When a new Auto Document Feeder Unit is mounted **NOTE** **• After the [CCD SUB ZOOM] adjustments have been performed** **• After the [ADF 1ST SUB ZOOM] adjustments have been performed**
Adjustment Range	See P.22 of the Auto Document Feeder Unit service manual.
Setting/ Procedure	
Adjustment Instructions	

14.4.11 ADF LOOP

Function	• To adjust the length of the loop to be formed in paper before the registration rollers.
Use	• When an original misfeed or skew occurs.
Adjustment Instructions	See P.23 of the Auto Document Feeder Unit service manual.
Adjustment Range	
Setting/ procedure	

14.4.12 FLICKER

Function	• Eliminates flickers of a room fluorescent light when it occurs due to power source use environment or similar reason.
Use	• Use when the fluorescent light flickers due to power source use environment or similar reason.
Setting/ procedure	• The default setting is 0. "0": Flicker control is determined according to an area code. 1: Flicker control is always on. 2: Flicker control is always off.

14.4.13 TOP ADJUSTMENT

Function	• Adjusts the top margin of media for single-sided printing.
Use	• To correct a misaligned print image. PLAIN PAPER : Adjust the head margin of plain paper. THICK : Adjust the head margin of thick paper. ENVELOPE : Adjust the head margin of envelope. TRANSPARENCY: Adjust the head margin of transparency.
Setting /procedure	*1.* Select [TOP ADJUSTMENT] and press the Select key. *2.* Select desired paper type and press the Select key. *3.* Select desired adjustment amount with the up key▲/down key▼ and press the Select key. -15 to +15 (1 step: 0.21 mm)

14.4.14 LEFT ADJ. (FRONT)

Function	• Adjusts the left margin of media for single-sided printing.
Use	• To correct a misaligned print image. TRAY 1: Adjust the left margin of media fed from tray 1 (manual tray.) TRAY 2: Adjust the left margin of media fed from tray 2. TRAY 3: Adjust the left margin of media fed from tray 3.
Setting /procedure	*1.* Select [LEFT ADJ. (FRONT)] and press the Select key. *2.* Select desired tray and press the Select key. *3.* Select desired adjustment amount with the up key▲/down key▼ and press the Select key. -15 to +15 (1 step: 0.21 mm)

14.4.15 LEFT ADJ. (BACK)

Function	• Adjusts the left margin of media for double-sided printing.
Use	• To correct a misaligned print image. TRAY 1: Adjust the left margin of duplex print media fed from tray 1 (manual tray.) TRAY 2: Adjust the left margin of duplex print media fed from tray 2. TRAY 3: Adjust the left margin of duplex print media fed from tray 3.
Setting /procedure	*1.* Select [LEFT ADJ. (BACK)] and press the Select key. *2.* Select desired tray and press the Select key. *3.* Select desired adjustment amount with the up key▲/down key▼ and press the Select key. -15 to +15 (1 step: 0.21 mm)

14.4.16 TRANSFER POWER

A. SIMPLEX PASS

Functions	• Adjust the 2nd image transfer output (ATVC) on the single-sided pages for each media type.
Use	• To use when the transfer failure at the trailing edge occurs.
Adjustment Range	• The default setting is 0. -8 to +7
Adjustment Instructions	To increase the ATVC value (in the direction of a foggier image), decrease the setting value. To decrease the ATVC value (in the direction of a less foggy image), increase the setting value.
Setting/ Procedure	1. Select [TRANSFER POWER] and press the Select key. 2. Select [SIMPLEX PASS] and press the Select key. 3. Select desired media type with the up key▲/down key▼ and press the Select key. 4. Select desired setting value with the up key▲/down key▼ and press the Select key.

B. DUPLEX PASS

Functions	• Adjust the 2nd image transfer output (ATVC) on the duplexed pages for each media type.
Use	• To use when the transfer failure at the trailing edge occurs.
Adjustment Range	• The default setting is 0. -8 to +7
Adjustment Instructions	To increase the ATVC value (in the direction of a foggier image), decrease the setting value. To decrease the ATVC value (in the direction of a less foggy image), increase the setting value.
Setting/ Procedure	1. Select [TRANSFER POWER] and press the Select key. 2. Select [DUPLEX PASS] and press the Select key. 3. Select desired media type with the up key▲/down key▼ and press the Select key. 4. Select desired setting value with the up key▲/down key▼ and press the Select key.

C. MANUAL DUPLEX

Functions	• Adjust the 2nd image transfer output (ATVC) on the manual duplexed pages for each media type.
Use	• To use when the transfer failure at the trailing edge occurs.
Adjustment Range	• The default setting is 0. -8 to +7
Adjustment Instructions	To increase the ATVC value (in the direction of a foggier image), decrease the setting value. To decrease the ATVC value (in the direction of a less foggy image), increase the setting value.
Setting/ Procedure	1. Select [TRANSFER POWER] and press the Select key. 2. Select [MANUAL DUPLEX] and press the Select key. 3. Select desired media type with the up key▲/down key▼ and press the Select key. 4. Select desired setting value with the up key▲/down key▼ and press the Select key.

14.4.17 IMG ADJ THICK

Function	• To fine-adjust density of printed images of each color for thick paper and OHP transparencies.
Use	• To change the density of the printed image for each color with thick paper and OHP transparencies.
Adjustment Instructions	• Light color: increase the setting value • Dark color: decrease the setting value
Setting/ procedure	• The default setting is 0. -5 to +5 1. Call the service mode to the display. 2. Select [ADJUST] → [IMG ADJ THICK] and press the Select key. 3. Select desired color with the up key ▲/down key ▼ and press the Select key. 4. Select desired setting value with the up key ▲/down key ▼ and press the Select key.

14.4.18 IMG ADJ BLACK

Function	• To fine-adjust the density of the printed image for a black printing.
Use	• To vary the density of the printed image of a black printing.
Adjustment Instructions	• If the black is light, increase the setting value. • If the black is dark, decrease the setting value.
Setting/ procedure	• The default setting is 0. -2 to +2 1. Call the service mode to the display. 2. Select [ADJUST] → [IMG ADJ BLACK] and press the Select key. 3. Select desired setting value with the up key ▲/down key ▼ and press the Select key.

14.4.19 IMAGE ADJ PARAM

Function	• Adjusts the printer in case of an image quality problem (uneven density)
Use	• To correct image quality problems (uneven density) due to the printer being operated at a high altitude.
Setting /procedure	• The default setting is 0. "0" 1 2 3 **NOTE** • **When the setting has been changed, be sure to run a [CALIBRATION] process.** See P.134

14.4.20 MAXIMUM DENSITY

Functions	• To adjust gradation, color, and image density to target reproduction levels by varying the maximum amount of toner sticking to media through auxiliary manual fine-adjustment of gamma of each color after gradation adjust.
Use	• An image quality problem is not corrected even after gradation adjust has been run.
Adjustment Range	• The default setting is 2. 0 1 "2" 3 4
Adjustment Instructions	To increase the maximum amount of toner sticking, increase the setting value. To decrease the maximum amount of toner sticking, decrease the setting value.
Setting/ Procedure	*1.* Select [MAXIMUM DENSITY] and press the Select key. *2.* Select desired color with the up key▲/down key▼ and press the Select key. *3.* Select desired setting value with the up key▲/down key▼ and press the Select key. **NOTE** • **When the setting has been changed, be sure to run a [CALIBRATION] process.** See P.134

14.4.21 FUSER SPEED

A. HIGH SPEED

Function	• To adjust the speed of the fusing motor when the transport speed is 144 mm/s so as to match the fusing speed with transport speed.
Use	• Brush effect or blurred image is evident as a result of changes in environmental conditions or degraded durability.
Adjustment Range	• The default setting is 0. -20 to +20 (Step: 1)
Adjustment Instructions	If brush effect is evident, vary the setting value and check for image. If a blurred image occurs, decrease the setting.
Setting /procedure	*1.* Select [FUSER SPEED] and press the Select key. *2.* Select [HIGH SPEED] and press the Select key. *3.* Select desired setting value with the up key▲/down key▼ and press the Select key.

B. LOW SPEED

Function	• To adjust the speed of the fusing motor when the transport speed is 72 mm/s so as to match the fusing speed with transport speed.
Use	• Brush effect or blurred image is evident as a result of changes in environmental conditions or degraded durability.
Adjustment Range	• The default setting is 0. -20 to +20 (Step: 1)
Adjustment Instructions	If brush effect is evident, vary the setting value and check for image. If a blurred image occurs, decrease the setting.
Setting /procedure	*1.* Select [FUSER SPEED] and press the Select key. *2.* Select [LOW SPEED] and press the Select key. *3.* Select desired setting value with the up key▲/down key▼ and press the Select key.

14.4.22 TEMPERATURE

Function	• To adjust the fusing heating temperature individually for each paper type so as to ensure good fusing performance that varies with varying environmental conditions.
Use	• When fusing performance is poor, or wax streak or offset occurs when the type of paper is changed or environmental conditions change. • Use this function when curled paper, or paper misfeed as a result of the curled paper, occurs under varying environmental conditions or depending on the type of paper used.
Adjustment Range	PLAIN PAPER: -10 °C to 0 °C (step: 5 °C) TRANSPARENCY: -10 °C to 0 °C (step: 5 °C) THICK: -10 °C to 0 °C (step: 5 °C) ENVELOPE: -10 °C to 0 °C (step: 5 °C)
Adjustment Instructions	If fusing performance is poor, increase the setting. If wax streaks occur, decrease the setting. If offset is poor, decrease the setting. If curling of the paper occurs, decrease the setting.
Setting /procedure	*1.* Select [TEMPERATURE] and press the Select key. *2.* Select the type of paper and press the Select key. *3.* Select desired setting value with the up key▲/down key▼ and press the Select key.

14.4.23 AIDC MODE

Function	• Sets the frequency of image stabilization that is performed when the main power switch is turned ON or the machine returns from sleep mode.
Use	• MODE1: Always performs image stabilization when the main power switch is turned ON or the machine returns from sleep mode. (Standard mode) • MODE2: Reduces the frequency of image stabilization that is performed when the main power switch is turned ON or the machine returns from sleep mode. (Low mode)
Setting /procedure	• The default setting is MODE1. “MODE1” MODE2

14.4.24 SUPPLIES REPLACE

A. TRANSFER BELT

Function	• Resets the transfer belt counter.
Use	• To use when the transfer belt has been replaced.
Setting /procedure	*1.* Select [SUPPLIES REPLACE] → [TRANSFER BELT]. *2.* Press the Select key. *3.* Press the Select key and reset the counter.

B. FUSER UNIT

Function	• Resets the fuser unit counter.
Use	• To use when the fuser unit has been replaced.
Setting /procedure	*1.* Select [SUPPLIES REPLACE] → [FUSER UNIT]. *2.* Press the Select key. *3.* Press the Select key and reset the counter.

C. TRANSFER ROLLER

Function	• Resets the transfer roller counter.
Use	• To use when the transfer roller has been replaced.
Setting /procedure	*1.* Select [SUPPLIES REPLACE] → [TRANSFER ROLLER]. *2.* Press the Select key. *3.* Press the Select key and reset the counter.

14.4.25 BK CLEAR

Function	• To clear engine information backup data
Use	• Use when the engine information backup data is cleared.
Setting /procedure	*1.* Select [BK CLEAR] and press the Select key. *2.* Press the Select key and clear the backup data.

14.5 COUNTER

14.5.1 TOTAL PRINT

A. TOTAL FACE

Function	• Displays the total number of face.
Use	• When checking the total number of face.

B. COLOR COPY

Function	• Displays the number of color copies made.
Use	• When checking the number of color copies made.

C. COLOR PRINT

Function	• Displays the number of color printed pages produced.
Use	• When checking the number of color printed pages produced.

D. MONO COPY

Function	• Displays the number of monochrome copies made.
Use	• When checking the number of monochrome copies made.

E. MONO PRINT

Function	• Displays the number of monochrome printed pages produced.
Use	• When checking the number of monochrome printed pages produced.

F. FAX PRINT

Function	• Displays the number of FAX printed pages produced.
Use	• When checking the number of FAX printed pages produced.

G. TOTAL DUP.

Function	• Displays the total number of sheets of duplex copy or duplex print.
Use	• When checking the total number of sheets of duplex copy or duplex print.

H. D COLOR COPY

Function	• Displays the number of duplex color printed pages produced.
Use	• When checking the number of duplex color printed pages produced.

I. D COLOR PRN

Function	• Displays the number of duplex monochrome copies made.
Use	• When checking the number of duplex monochrome copies made.

J. D MONO COPY

Function	• Displays the number of duplex monochrome copies made.
Use	• When checking the number of duplex monochrome copies made.

K. D MONO PRN

Function	• Displays the number of duplex monochrome printed pages produced.
Use	• When checking the number of duplex monochrome printed pages produced.

14.5.2 FAX COUNTER

Function	• Displays the number of FAX printed pages produced.
Use	• When checking the number of FAX printed pages produced. TX JOB: Counter the number of transmission job. RX JOB: Counter the number of reception job.

14.5.3 SCAN COUNTER

Function	• To display the count of the scan counter.
Use	• When checking the number of scans made. IR: Count one when one time of IR action completed. ADF (SINGLE): Count the number of sheet of ADF (single) scanning. ADF (DUPLEX): Count the number of sheet of ADF (Duplex) scanning.

14.5.4 TRAY COUNTER

Function	• Displays the number of sheets of paper used for each tray.
Use	• The element to count is as follows. TRAY1, TRAY2, TRAY3

14.5.5 PAPER SIZE COUNTER

Function	• Displays the number of sheets of paper used for each size and type.
Use	• A paper size counter is as follows. A4, B5, A5, LEGAL, LETTER, OTHERS

14.5.6 PAPER TYPE COUNTER

Function	• Displays the number of sheets of paper used for each paper type.
Use	• A paper type counter is as follows. PLAIN PAPER, RECYCLED, THICK, THICK2, GLOSSY, GLOSSY2, TRANSP., ENVELOPE, LETTERHEAD, POSTCARD, LABEL

14.5.7 APPLICATION COUNT.

Function	• To display the count of the number of sheets of paper used for each of different applications.
Use	• When checking the number of sheets of paper used for each of different applications. COPY PRINT: Number of copies made FAX RX PRN.: Number of printed pages received by Fax REPORT PRN.: Number of printed report pages PC PRINT: Number of printed pages produced from PC FAX TX: Number of transmitting to Fax. MAIL TX: Number of transmitting to mail server. SCAN TO FTP: Number of transmitting to FTP server. SCAN TO SMB: Number of transmitting to SMB. SCAN TO USB: Number of transmitting to USB memory. TWAIN: Number of transmitting to PCl. PICTBRIDGE: Number of sheets counts at the time of the completion of printing. USB TO PRN.: Number of sheets counts at the time of the completion of USB printing.

14.5.8 SUPPLIES STATUS

Function	• Display toner and image unit status.
Use	C TONER: Displays the remaining amount of toner in the cyan (C) toner cartridge as a percentage. M TONER: Displays the remaining amount of toner in the magenta (M) toner cartridge as a percentage. Y TONER: Displays the remaining amount of toner in the yellow (Y) toner cartridge as a percentage. K TONER: Displays the remaining amount of toner in the black (K) toner cartridge as a percentage. C I-UNIT: Displays the remaining service life of the cyan imaging unit as a percentage. M I-UNIT: Displays the remaining service life of the magenta imaging unit as a percentage. Y I-UNIT: Displays the remaining service life of the yellow imaging unit as a percentage. K I-UNIT: Displays the remaining service life of the black imaging unit as a percentage.

14.5.9 CRU USAGE

Function	• Displays the remaining life of the maintenance service parts.
Use	• To check the remaining life of the maintenance service parts. TRANSFER BELT: Displays the remaining life of the transfer belt. FUSER UNIT: Displays the remaining life of the fusing unit. TRANSFER ROLLER: Displays the remaining life of the transfer roller.

14.5.10 JAM COUNTER

Function	• Displays the number of misfeeds that have occurred.
Use	• When checking for the number of misfeeds that have occurred PRINTER, ADF

14.5.11 TROUBLE COUNTER

Function	• Displays the number of malfunctions detected.
Use	• When checking for the number of malfunctions detected TOTAL: Total numbers of all malfunctions detected. 4FFF: Number of the malfunction “4FFF” detected.

14.6 DISPLAY

14.6.1 MAIN F/W VER.

Function	• Displays the version of the controller firmware.
Use	• When upgrading the firmware • When the image processing board has been replaced with a new one

14.6.2 ENGINE F/W VER.

Function	• Displays the version of the engine firmware.
Use	• When the printer control board has been replaced with a new one

14.6.3 MAIN RAM SIZE

Function	• Displays the size of the main memory.
Use	• When checking for the memory size

14.6.4 SERIAL NO.

Function	• Displays the serial number of the printer engine.
Use	• When checking for the printer serial number

14.6.5 PP F/W VER.

Function Use	• Displays the version of the PP firmware.

14.6.6 PP BOOT VER.

Function Use	• Displays the version of the PP boot firmware.

14.6.7 PRINTER RAM SIZE

Function	• Displays the size of the printer memory.
Use	• When checking for the memory size

14.6.8 HARD DISK

Function	• Displays the size of the hard disk.
Use	• When checking for the hard disk size

14.6.9 CARD

Function	• Displays the size of the CF card.
Use	• When checking for the CF card size

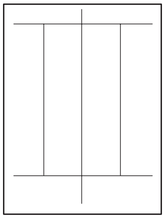
14.7 FUNCTION

14.7.1 PAPER FEED TEST

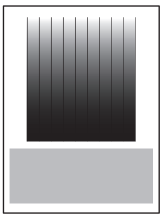
Function	• To check the paper feeding in the paper take-up/transport sections without printing on the paper.
Use	• When a paper misfeed occurs
Setting/ procedure	*1.* Select the paper tray. *2.* Press the Select key to begin testing paper feeding. *3.* Press the Stop/Reset key to stop testing paper feeding. **NOTE** **• It cannot be operated at the time of warming up.** **• Don't count.**

14.7.2 PRN TEST PATTERN

A. PATTERN1

Function	• To print the test pattern for adjusting the image.
Use	• If there is tilt or when registration or zoom ratio adjustments are performed
Setting/ procedure	*1.* Select the paper tray. *2.* Select the [PATTERN1]. *3.* Press the Select key to print the test pattern.  4139F3C550DA

B. PATTERN2

Function	• To print the test pattern for halftones and gradations.
Use	• When checking density and pitch irregularities • When checking reproducibility of gradations
Setting/ procedure	*1.* Select the paper tray. *2.* Select the [PATTERN2]. *3.* Press the Select key to print the test pattern.  4139F3C551DA

14.7.3 ADF FEED TEST

Function	• To check the paper feeding in the paper take-up/transport sections in the Automatic Document Feeder.
Use	• When a document misfeed occurs
Setting/ procedure	*1.* Load paper into the Automatic Document Feeder. *2.* Select the [1-SIDED] or [2-SIDED]. *3.* Press the Select key to begin testing paper feeding. *4.* Press the Stop/Reset key to stop testing paper feeding.

14.7.4 COPY ADF GLASS

Function	• To check for dirt in the scanning section of the Automatic Document Feeder.
Use	• If spots appear in the copies
Setting/ procedure	*1.* Load A4S or LetterS paper into Tray1. *2.* Press the Select key to start the [COPY ADF GLASS] function. *3.* Two copy samples are fed out. *4.* Check that no spots appear in the copy samples. *5.* Press the Stop/Reset key to stop the [COPY ADF GLASS] function.

14.7.5 FAX RES. COPY TEST

Function	• Fax resolution copy test
Use	• To check whether the encoding/ decoding process is correct
Setting/ procedure	• The paper source is fixed to Tray1. (Tray cannot be changed.) • When A4 or Letter is not loaded in Tray1, operation of printing is not performed.

14.7.6 SCAN TEST

Function	• To check the lighting of the Exposure Lamp and the movement of the scanner.
Use	• If the scanner malfunctions
Setting/ procedure	*1.* Press the Select key to begin the scanner test. *2.* Press the Stop/Reset key to stop the scanner test.

14.7.7 PRINTER TEST

A. SENSOR

Function	• To display the states of the input ports of sensors and switches when the machine remains stationary. (Main body)
Use	• Used for troubleshooting when a malfunction or a misfeed occurs. (Main body)
Setting/ procedure	• The operation of each of the switches and sensors can be checked on a real-time basis. • It can be checked as long as the 5-V power line remains intact even when a door is open.

(1) Sensor check list

Panel display	Sensor name	Operation characteristics/panel display	
		0	1
TRAY1 EMPTY	Tray2 media empty sensor (PS1)	Media not present	Media present
MF EMPTY	Tray1 media empty sensor (PS3)	Media not present	Media present
2ND EMPTY	Media empty sensor (PS1)	Media not present	Media present
SYNC. ROLLER	Registration sensor (PS4)	Media not present	Media present
PAPER LOOP	Media loop sensor (PS6)	Media not present	Media present
EXIT	Exit sensor/1 (PS8)	Media not present	Media present
H TRANSPORT	Exit sensor/2 (PS31)	Media not present	Media present
PAPER FULL	Media full sensor (PS32)	Other than full	Full
DUPLEX PAPER	Duplex transport sensor (PS26)	Media not present	Media present
2ND FEEDER	Media feed sensor (PS3)	Media not present	Media present
FRONT DOOR	Front door sensor (PS22)	Open	Close
RIGHT DOOR	Right door sensor (PS21)	Open	Close
SCANNER UNIT	Scanner open sensor (PS24)	Open	Close
2ND FEEDER COVER	Right door sensor (PS5)	Open	Close
DUPKEX SWITCH BACK	Switchback sensor (PS30)	Media not present	Media present
24V MONITOR	—	OFF	ON
RETRACTION 1ST	1st image transfer retraction position sensor (PS9)	Media not present	Media present
RETRACTION 2ND	2nd image transfer retraction position sensor (PS10)	Media not present	Media present
CASSETTE SET	Tray2 set switch (SW5)	Not set	Set
2ND FEEDER SIZE	Media size switch (SW1)	OFF	ON
2ND FEEDER SIZE		OFF	ON
2ND FEEDER SIZE		OFF	ON
WASTE TONER FULL	Waste toner sensor (PS11)	Full	Other than full
OHP	OHP sensor (PS7)	Other than OHP	OHP

B. ELECTRIC PARTS

Function	• Makes an operation check of each of electrical parts of the machine.
Use	• Use to make an operation check of each of electrical parts of the machine.
Setting/ procedure	1. Select the electrical part to be operated. 2. Press the Select key, which operates the electrical part for 1 sec. before being automatically stopped.

(1) Electric parts list

Panel display	Parts name
LV FAN (H-S)	DC power supply fan motor (FM1)
FUSER FAN (H-S)	Fusing fan motor (FM2)
FUSER FAN (M-S)	
OZONE FAN	Ozone ventilation fan motor (FM3)
FEEDER FAN (H-S)	Defogger fan motor (FM5)
FEEDER FAN(M-S)	
POLYGON MOTOR	Polygon motor (M8)
2ND FEEDER MOTOR	Transport motor (M1)
TRAY1 FEED CLUTCH	Tray2 media feed clutch (CL1)
MANU. FEED CLUTCH	Tray1 media feed clutch (CL2)
SYNC. ROLLER CLUTCH	Registration roller clutch (CL3)
2ND TRANS. CLUTCH	2nd image transfer pressure/retraction clutch (CL5)
1ST TRANS. CLUTCH	1st image transfer pressure/retraction clutch (CL4)
2ND FEEDER CLUTCH	Media feed clutch (CL1)
DUP. NORMAL CLUTCH	Switchback roller feed clutch (CL11)
DUP. REV. CLUTCH	Switchback roller reverse clutch (CL12)
DUP. FEED CLUTCH	Duplex transport roller clutch (CL13)
DUP. FAN	Duplex cooling fan motor (FM4)
COLOR PC MOTOR YMC	Color PC drum motor (M2)
DEV. MOTOR K	K developing motor (M5)
DEV. MOTOR YMC	Color developing motor (M1)
TONER SUPPLY MOTOR Y	Toner supply motor /Y, M (M6)
TONER SUPPLY MOTOR M	
TONER SUPPLY MOTOR C	Toner supply motor/C, K (M7)
TONER SUPPLY MOTOR K	
FUSER MOTOR	Fusing motor (M4)

C. PRINT TEST

Function Use	• Produces an image pattern on the engine side as commanded from the controller, thereby making a test print on the engine only.
Setting/ procedure	1. Load tray 1 with paper. 2. Select [SERVICE MODE] - [FUNCTION] - [PRINTER TEST] - [PRINT TEST] and press the Select key. **NOTE** **• Using A4 or Letter depend on PTT setting.** **• Paper is fed from only Tray1.**

14.7.8 ADF TEST

A. SENSOR

Function	• To display the states of the input ports of sensors and switches when the machine remains stationary. (ADF)
Use	• Used for troubleshooting when a malfunction or a misfeed occurs. (ADF)
Setting/ procedure	• The operation of each of the switches and sensors can be checked on a real-time basis. • It can be checked as long as the 5-V power line remains intact even when a door is open.

(1) Sensor check list

Panel display	Sensor name	Operation characteristics/panel display	
		0	1
DOCUMENT	Leading edge detection sensor	Media not present	Media present
AS	Media feed sensor	Media not present	Media present
AL	Exit sensor	Media not present	Media present
RS	Registration sensor	Media not present	Media present

B. ELECTRIC PARTS

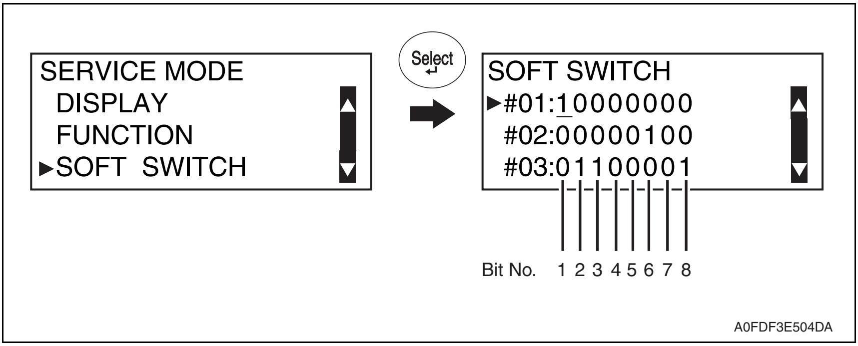
Function	• Makes an operation check of each of electrical parts of the ADF.
Use	• Use to make an operation check of each of electrical parts of the ADF.
Setting/ procedure	1. Select the electrical part to be operated. 2. Press the Select key, which operates the electrical part for 1 sec. before being automatically stopped. **NOTE** **• After the test, be sure to turn OFF and then turn ON the power switch of the main body.**

(1) Electric parts list

Panel display	Sensor name
Motor	Transport motor (M1)
E-Clutch	Feed clutch (CL1)
Solenoid	Retraction solenoid (SD1)

14.8 SOFT SWITCH

- Refer to the chapter of soft switch for the explanation of soft switch.
  See P.238



14.8.1 KEY DEFINITION FOR SOFT SWITCH

Key	Definition
▼	Soft Switch Number Forward.
▲	Soft Switch Number Backward.
▶	Bit No. Forward.
◀	Bit No. Backward.
1 or 0	Bit No. is changed.
Select	The setting value of Soft Switch Number is defined.

14.9 REPORT

14.9.1 SERVICE DATA LIST

Function	• Print service data list report and Error log history list.
Use	Service Data list includes the following items: • SOFT SWITCH • COMMUNICATION HISTORY & COUNTER • ADJUST • RX IN MEMORY • ADMINISTRATOR PASSWORD • MAIN RAM SIZE • ROM ID Error log history list includes the following items: • Index: Index number from 0 - 9999 • Error: Error code number • Maker: NSF frame maker code • Tell.: Remote side or TX side telephone number for that transaction
Setting/ procedure	1. Enter the [SERVICE MODE]. 2. Select [REPORT] and press the Select key. 3. Select [SERVICE DATA LIST] and press the Select key.

(1) SERVICE DATA LIST (example)

SERVICE DATA LIST

```
NAME:
TEL :
DATE:JUL.02.2008 11:55

--SOFT  SWITCH --
SW01-SW16       00 20 80 0C 00 00 07 61 00 81 00 80 10 00 01 03
SW17-SW32       00 00 68 00 80 06 00 00 00 28 00 A7 14 68 00 00
SW33-SW48       C0 82 10 8A 00 C1 00 08 00 00 00 04 00 06 00 89
SW49-SW64       01 00 00 00 00 B0 00 00 00 00 00 21 0F 00 80 10

--COMMUNICATION HISTORY & COUNTER --
000001: ECM RX TIME                       000000: ECM TX TIME
000008: G3 RX TIME                        000000: G3 RX PAGE
000000: V.17 14.4K                        000000: V.17 12K
000000: V.17 9.6K                         000000: V.17 7.2K
000000: V.29 9.6K                         000000: V.29 7.2K
000000: V.27 4.8K                         000001: V.27 2.4K
000001: G3 TX TIME                        000000: G3 TX PAGE
000000: V.17 14.4K                        000000: V.17 12K
000000: V.17 9.6K                         000000: V.17 7.2K
000000: V.29 9.6K                         000000: V.29 7.2K
000000: V.27 4.8K                         000000: V.27 2.4K
000027: V.34 RX TIME                      000007: V.34 RX PAGE
000002: 33.6K                             000005: 31.2K
000000: 28.8K                             000000: 26.4K
000000: 24.0K                             000000: 21.6K
000000: 19.2K                             000000: 16.8K
000000: 9.6K                              000000: 7.2K
000000: 4.8K                              000000: 2.4K
000000: V.34 TX TIME                      000015: V.34 TX PAGE
000000: 33.6K                             000006: 31.2K
000000: 28.8K                             000000: 26.4K
000000: 24.0K                             000000: 21.6K
000000: 19.2K                             000000: 16.8K
000000: 9.6K                              000000: 7.2K
000000: 4.8K                              000000: 2.4K
000007: JBIG TX TIME                      000007: JBIG RX TIME
000000: TOTAL COUNTER
000849: COPY PRINT                        000000: FAX PRINT
000127: REPORT PRINT                      000000: PC PRINT

-- ADJUST --
CCD MAIN ZOOM       : 100  TRANSFER POWER           IMAGE ADJ PARAM    : 0
CCD SUB ZOOM        : 100   SIMPLEX PASS
CCD MAIN REGIST     : 100    PLAIN PAPER      : 0   MAXIMUM DESNITY
CCD SUB REGIST      : 109    TRANSPARENCY     : 0    CYAN              : 0
                             THICK1           : 0    MAFENTA           : 0
ADF 1st MAIN REGIST : 100    THICK2           : 0    YELLOW            : 0
ADF 1st SUB ZOOM    : 100    POSTCARD         : 0    BLACK             : 0
ADF 1st SUB REGIST  : 100    ENVELOPE         : 0
ADF 2nd MAIN REGIST : 100    LABEL            : 0   FUSER SPEED
ADF 2nd SUB ZOOM    : 100    GLOSSY1          : 0    HIGH SPEED        : 0
ADF 2nd SUB REGIST  : 100    GLOSSY2          : 0    LOW SPEED         : 0
ADF LOOP            : 100   DUPLEX PASS
                             PLAIN PAPER      : 0   TEMPERATURE
FLICKER             : 0     MANUAL DUPLEX            PLAIN PAPER       : 0
                             PLAIN PAPER      : 0    TRANSPARENCY      : 0
TOP ADJUSTMENT               THICK1           : 0    THICK             : 0
 PLAIN PAPER        : 0      THICK2           : 0    ENVELOPE          : 0
 THICK              : 0      POSTCARD         : 0
 ENVELOPE           : 0      ENVELOPE         : 0   AIDC MODE          : MODE1
 TRANSPARENCY       : 0      LABEL            : 0
                             GLOSSY1          : 0
LEFT ADJ FRONT               GLOSSY2          : 0
 TRAY1              : 0
 TRAY2              : 0    IMG ADJ THICK
 TRAY3              : 0     CYAN              : 0
                            MAFENTA           : 0
LEFT ADJ BACK               YELLOW            : 0
 TRAY1              : 0     BLACK             : 0
 TRAY2              : 0
 TRAY3              : 0    IMG ADJ BLACK      : 0

RX IN MEMORY :
ADMIN.PASSWORD:000000
MAIN RAM SIZE : 256MB

-- ROM ID --
MAIN   : 06/14/2007 V0.01
BOOT   : 07/16/2007 V0.03
ENGINE: A00F-50F0-0302-00
```

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(2) ERROR LOG HISTORY LIST (example)

- The following table is the error log history. The table keeps the last 40 records only.

ERROR LOG HISTORY LIST

Index	Error	Maker	Tele.
0001	:00A0	4230	88634733507
0002	:00A0	49EE	
0003	:0070	0000	
0004	:0070	0000	
0005	:0070	0000	
0006	:0070	0000	
0007	:0070	0000	
0008	:0070	0000	
0009	:0070	0000	123

NSF signal 3rd. and 4th byte (Maker)

Keep 20 digits of TSI or CSI (Tele.)

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14.9.2 ERROR CODE LIST

Function / Use	• Print error code (CODE) and error occurrence time (ERROR TIMES).
Setting/ procedure	*1.* Enter the [SERVICE MODE]. *2.* Select [REPORT] and press the Select key. *3.* Select [ERROR CODE LIST] and press the Select key.

(1) ERROR CODE LIST (example)

ERROR CODE LIST

CODE	ERROR TIMES	CODE	ERROR TIMES	CODE	ERROR TIMES
0001	00000000	0002	00000000	0003	00000000
0004	00000000	0005	00000000	0006	00000000
0007	00000000	0008	00000000	0009	00000000
000A	00000000	000B	00000000	000C	00000000
000D	00000000	000E	00000000	000F	00000000
0010	00000000	0011	00000000	0012	00000000
0013	00000000	0014	00000000	0015	00000000
0016	00000000	0017	00000000	0018	00000000
0019	00000000	001A	00000000	001B	00000000
001C	00000000	001D	00000000	001E	00000000
001F	00000000	0020	00000000	0021	00000000
0022	00000000	0023	00000000	0024	00000000
0025	00000000	0026	00000000	0027	00000000
0028	00000000	0029	00000000	002A	00000000
002B	00000000	002C	00000000	002D	00000000
002E	00000000	002F	00000000	0030	00000000
0031	00000000	0032	00000000	0033	00000000
0034	00000000	0035	00000000	0036	00000000
0037	00000000	0038	00000000	0039	00000000
003A	00000000	003B	00000000	003C	00000000
003D	00000000	003E	00000000	003F	00000000
0040	00000000	0041	00000000	0042	00000000
0043	00000000	0044	00000000	0045	00000000
0046	00000000	0047	00000000	0048	00000000
0049	00000000	004A	00000000	004B	00000000
004C	00000000	004D	00000000	004E	00000000
004F	00000000	0050	00000000	0051	00000000
0052	00000000	0053	00000000	0054	00000000
0055	00000000	0056	00000000	0057	00000000
0058	00000000	0059	00000000	005A	00000000
005B	00000000	005C	00000000	005D	00000000
005E	00000000	005F	00000000	0060	00000000
0061	00000000	0062	00000000	0063	00000000
0064	00000000	0065	00000000	0066	00000000
0067	00000000	0068	00000000	0069	00000000
006A	00000000	006B	00000000	006C	00000000
006D	00000000	006E	00000000	006F	00000000
0070	00000002	0071	00000000	0072	00000008
0073	00000000	0074	00000000	0075	00000000
0076	00000000	0077	00000000	0078	00000017
0079	00000000	007A	00000000	007B	00000000
007C	00000000	007D	00000000	007E	00000000
007F	00000000	0080	00000000	0081	00000000
0082	00000000	0083	00000001	0084	00000000
0085	00000000	0086	00000000	0087	00000000
0088	00000000	0089	00000000	008A	00000000
008B	00000000	008C	00000000	008D	00000000
008E	00000000	008F	00000000	0090	00000000
0091	00000001	0092	00000000	0093	00000000
0094	00000000	0095	00000000	0096	00000000
0097	00000000	0098	00000000	0099	00000000
009A	00000000	009B	00000000	009C	00000000
009D	00000000	009E	00000000	009F	00000000
00A0	00000024	00A1	00000000	00A2	00000000
00A3	00004558	00A4	00000002	00A5	00000000
00A6	00000000	00A7	00000006	00A8	00000000
00A9	00000001	00AA	00000000	00AB	00000000
00AC	00000000	00AD	00000000	00AE	00000000
00AF	00000000	00B0	00000000	00B1	00000000
00B2	00000000	00B3	00000000	00B4	00000000
00B5	00000000	00B6	00000000	00B7	00000000
00B8	00000000	00B9	00000000	00BA	00000000
00BB	00000000	00BC	00000000	00BD	00000000
00BE	00000000	00BF	00000000	00C0	00000000
00C1	00000000	00C2	00000000	00C3	00000000
00C4	00000000	00C5	00000000	00C6	00000000
00C7	00000000	00C8	00000000	00C9	00000000
00CA	00000000	00CB	00000000	00CC	00000000
00CD	00000000	00CE	00000000	00CF	00000000
00D0	00000000	00D1	00000000	00D2	00000000
00D3	00000000	00D4	00000000	00D5	00000000
00D6	00000000	00D7	00000000	00D8	00000000
00D9	00000000	00DA	00000000	00DB	00000000
00DC	00000000	00DD	00000000	00DE	00000000
00DF	00000000	00E0	00000000	00E1	00000000
00E2	00000000	00E3	00000000	00E4	00000000
00E5	00000000	00E6	00000000	00E7	00000000
00E8	00000000	00E9	00000000	00EA	00000000
00EB	00000000	00EC	00000000	00ED	00000000
00EE	00000000	00EF	00000000	00F0	00000000
00F1	00000000	00F2	00000000	00F3	00000000
00F4	00000000	00F5	00000000	00F6	00000000
00F7	00000000	00F8	00000000	00F9	00000000
00FA	00000000	00FB	00000000	00FC	00000000
00FD	00000000	00FE	00000006	00FF	00000002

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14.9.3 T.30 PROTOCOL LIST

Function	Print out T.30 or V8 protocol after communication.
Use	• SESSION: Session number • FUNCTION: Function Name • DESTINATION STATION: Destination Name/Tel. No. • DATE/TIME: Communication Date & Time • PAGE: Total page number for this session • MODE: Communication speed and ECM mode • RESULT: Communication result • TX: T.30 command sent by local Fax • RX: T.30 command received from remote Fax • DATA: T.30 frame that include address & control & Data
Setting/ procedure	*1.* Enter the [SERVICE MODE]. *2.* Select [REPORT] and press the Select key. *3.* Select [T.30 PROTOCOL LIST] and press the Select key.

(1) V.17 Communication (example)

PROTOCOL MONITOR REPORT

NAME:TMFP
TEL :886 3 4733507
DATE:APR.10.2008 12:20

SESSION	FUNCTION	NO.	DESTINATION STATION	DATE	TIME	PAGE	DURATION	MODE	RESULT
0001	RX	001	ABC_ABC_ABC 3535353535353535353535	MAY.29	14:51	001	00h00min35s	ECM -14.4	OK

TX	RX	DATA
CED		
NSF		FF 03 20 64 00 00 00 A0 88 CB 04 00 18 20 00 00 00 10 01 00
NSF		FF 03 20 64 00 00 00 A0 88 CB 00 00 00 00 00 00 00 10 01 00 00 01 06
DIS		FF 13 80 00 EE AA C4 80 91 80 80 20
	NSS	FF 03 23 64 00 00 00 A0 88 CB 04 00 00 00 00 00 00 02 0B 41 42 43 5F 41 42 43 5F 41 42 43
	NSS	FF 03 23 64 00 00 00 A0 88 CB 00 00 00 00 00 00 00 10 01 00 00
	TSI	FF 03 43 35 33 35 33 35 33 35 33 35 33 35 33 35 33 35 33
	DCS	FF 13 83 00 22 F0 84 80 80 80 80 20
	►TCF	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
CFR		FF 13 84
	►PIX	
	PPS-EOP	BF 13 BF 2F 00 00 51
MCF		FF 13 8C
	DCN	FF 13 FB

TRAINING PHASE (→ TCF)

DATA PHASE (→ PIX)

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(2) V.34 Communication (example)

PROTOCOL MONITOR REPORT

NAME:TMFP
TEL :886 3 4733507
DATE:APR.10.2008 12:20

SESSION	FUNCTION	NO.	DESTINATION STATION	DATE	TIME	PAGE	DURATION	MODE	RESULT
0001	TX	010	27187480	OCT.27	17:19	008	00h00min03s	ECM -33.6	OK

TX	RX	DATA
	ANS	
CM		V.8 PROTOCOL DUMP
	JM	
CJ		
	NSF	FF 03 20 00 00 25 00 00 00 12 10 6D 02 00 58 00 28 B8 A4 A0 80 91 60
	NSF	FF 03 20 00 00 25 01 45 43 4E 45 59 45 4B
	CSI	FF 03 40 30 38 34 37 38 31 37 32 20 20 20 20 20 20 20 20 20 20
	DIS	FF 13 80 20 EE A8 C4 80 98 81 80 80 60
DCS		FF 13 83 00 02 F0 84 80 80 80 80 80 20
	CFR	FF 13 84
►PIX		
PPS-EOP		FF 13 BF 2F 00 00 7F
	MCF	FF 13 8C
DCN		FF 13 FB

A0FDF3C508DA

14.10 ADMIN. REGISTRATION

Function Use	• Use to display or change the current Administrator number.
Setting/ procedure	• Administrator number: 000000 to 999999 *1.* Enter the [SERVICE MODE]. *2.* Select [ADMIN. REGISTRATION] and press the Select key. *3.* Check that the current ADMIN. No. is displayed and then press the [Back] key. *4.* Enter the new ADMIN. No. from the 10-key pad and press the Select key.

14.11 FIXED ZOOM CHANGE

Function Use	• The fixed zoom ratios can be changed.
Setting/ procedure	*1.* Enter the [SERVICE MODE]. *2.* Select [FIXED ZOOM CHANGE] and press the Select key. *3.* Select the fixed zoom ratio that you wish to change and press the Select key. *4.* Use the 10-Key Pad to type in the desired fixed zoom ratio.

- Default fixed zoom ratios and setting ranges according to marketing area

<Metric>

Setting name	Initial fixed zoom ratio	Setting range
REDUCTION2	70%	51% to 70%
REDUCTION1	81%	71% to 99%
EXPANSION1	115%	101% to 140%
EXPANSION2	141%	141% to 199%

<Inch>

Setting name	Initial fixed zoom ratio	Setting range
REDUCTION2	64%	51% to 64%
REDUCTION1	78%	65% to 99%
EXPANSION1	129%	101% to 153%
EXPANSION2	154%	154% to 199%

14.12 FACTORY TEST

- This test is for factory adjustment only and should NOT be used.

	Functions/Use
SIGNAL TEST	• This test is for factory adjustment only and should NOT be used.
RELAY TEST	• This test is for factory adjustment only and should NOT be used.
SENSOR TEST	• This test is for factory adjustment only and should NOT be used.
DIAL TEST	• This test is for factory adjustment only and should NOT be used.
VOLUME TEST	• To check the volume of the speaker.
PANEL BUZZER TEST	• To check the operation of the display and all indicators and buttons. • When the panel buzzer test are finish, press the panel reset key twice.
RAM TEST	• To test reading and writing of the memory.

14.13 CLEAR DATA

14.13.1 SRAM CLEAR

Function	To clear the settings for the functions listed at the right and return the functions to their default settings.
Use	The following items are cleared (initialization). • Menu mode (Except for [ADMIN. MANAGEMENT] - [USER SETTING] - [DATE&TIME] that keeps its setting value): • Only [USER SERVICE MODE] of the user service mode: Set to default • Only [TX/RX Result] of the Display mode: Clear • Only [SERVICE'S CHOICE] and [SOFT SWITCH] of the Service mode: Set to default
Setting/ procedure	**NOTE** • **Before executing [SRAM CLEAR], be sure to record the setting values that are to be initialized through [SRAM CLEAR].** • **For the record of the setting values, it is a good idea to have reports and lists printed.** • **Some setting values are not included any of these reports or lists. Be sure to make a note of them separately.** • **After [SRAM CLEAR] has been executed, make necessary entries of data again based on the setting values recorded.**

14.13.2 MEMORY CLEAR

Function	To clear the settings for the functions listed at the right and return the functions to their default settings.
Use	The following items are cleared (initialization). • Only [SERVICE'S CHOICE] and [FIXED ZOOM CHANGE] of the Service mode: Set to default
Setting/ procedure	**NOTE** • **Before executing [MEMORY CLEAR], be sure to record the setting values that are to be initialized through [MEMORY CLEAR].** • **For the record of the setting values, it is a good idea to have reports and lists printed.** • **Some setting values are not included any of these reports or lists. Be sure to make a note of them separately.** • **After [MEMORY CLEAR] has been executed, make necessary entries of data again based on the setting values recorded.**

14.14 PS/PCL

14.14.1 PRINT MENU

A. MAINTENANCE INFO

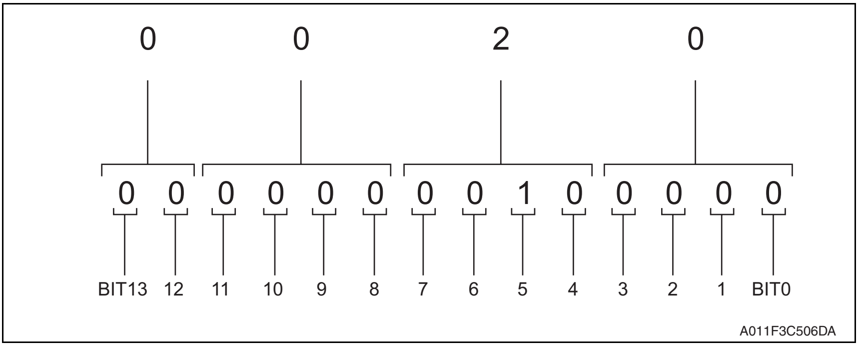
Function	• To produce an output of a list of setting values, adjustment values, total counter values, and others.
Use	• To check the maintenance information. The items which can be checked are as follows. [Device Caution Information]: Process caution information [Count (total)]: Counter value for each color [Coverage (total)]: Coverage rate for each color [Replace count (total)]: Number of times IU, TC, transfer belt, transfer roller, and fuser unit have been replaced. [Imaging Unit Information]: Information concerning the print unit [Toner Cartridge Information]: Information concerning the toner cartridge
Setting/ procedure	*1.* Call the service mode to the display. *2.* Select [PS/PCL] → [PRINT MENU] → [MAINTENANCE INFO] and press the Select key. *3.* Select [PRINT] and press the Select key.

(1) How to read process caution information

- Convert the numerical value of the hexadecimal number printed on “PROCESS CAUTION INFORMATION” in [Maintenance Information] into the binary number, it compares with the allocation of each BIT, and the caution status is confirmed.

ex. When process caution information is displayed as 0x0020.

1. Convert four end digits “0020” of 0x0020 into the binary number (14 digits).
2. The BIT number is allocated in converted value “00000000100000.”
(BIT0 to BIT13 is sequentially allocated from the first digit.)



3. In this case, BIT No. “5” corresponds to “1”. From the “PROCESS CAUTION INFORMATION”, IDC sensor (front) malfunction can be detected.

(2) Conversion method from hexadecimal number to binary number

1. The hexadecimal number (four digits) is converted in each digit based on the following table.

Hexadecimal number	Binary number	Hexadecimal number	Binary number	Hexadecimal number	Binary number	Hexadecimal number	Binary number
0	0000	4	0100	8	1000	C	1100
1	0001	5	0101	9	1001	D	1101
2	0010	6	0110	A	1010	E	1110
3	0011	7	0111	B	1011	F	1111

2. Match the converted numerical value of four digits, then two head digits are excluded and it is assumed the binary number of 14 digits.

PROCESS CAUTION INFORMATION

BIT	Item	Description	
0	—	—	
1	—	—	
2	—	—	
3	—	—	
4	—	—	
5	IDC sensor board/Fr failure	1	• IDC sensor output values are out of the specified range.
		0	• Right door or front cover open/close, power switch OFF/ ON, and normal image stabilization are complete besides the ones listed above.
6	—	—	
7	—	—	
8	—	—	
9	—	—	
10	IDC sensor board/Re failure	1	• IDC sensor output values are out of the specified range.
		0	• Right door or front cover open/close, power switch OFF/ ON, and normal image stabilization are complete besides the ones listed above.
11	Color shift test pattern failure	1	• The number of points detected in the main scan direction is more or less than the specified value during main scan direction registration correction. • The number of points detected in the sub scan direction is more or less than the specified value during sub scan direction registration correction.
		0	• Right door or front cover open/close, power switch OFF/ ON, and normal image stabilization are complete besides the ones listed above.
12	Color shift adjust failure	1	• The color shift amount is greater than the specified range during main scan direction registration correction. • The color shift amount is greater than the specified range during sub scan direction registration correction.
		0	• Right door or front cover open/close, power switch OFF/ ON, and normal image stabilization are complete besides the ones listed above.
13	—	—	

B. EVENT LOG

Function	• To print the Event Log information.
Use	• To check the jams/troubles which occurred, and the history of replacing the consumables. The items which can be checked are as follows. [Paper Jam Error]: The number of times jam have occurred and its history [Engine Fatal Error]: The history of the troubles which required service call [Fuser Unit]: The history of replacing the fuser unit [Transfer Belt]: The history of replacing the transfer belt [Second Trans]: The history of replacing the transfer roller [Toner Cartridge]: The history of replacing the toner cartridge [Imaging Unit]: The history of replacing the print unit [Trouble Counter]: Trouble counting for each section
Setting/ procedure	*1.* Call the service mode to the display. *2.* Select [PS/PCL] → [PRINT MENU] → [EVENT LOG] and press the Select key. *3.* Select [PRINT] and press the Select key.

C. ELEMENT PAGE

Function	• To print the Engine Element Data Information.
Use	• To check the Element Data. • See the attached chart listed below for details.
Setting/ procedure	*1.* Call the service mode to the display. *2.* Select [PS/PCL] → [PRINT MENU] → [ELEMENT PAGE] and press the Select key. *3.* Select [PRINT] and press the Select key.

Engine Element Data Information

Element Data Name	Description
INSIDE HUMIDITY	• Displays the inside humidity (in 1% increments).
INSIDE TEMPERATURE	• Displays the inside temperature (in 1 °C increments).
PH TEMPRATURE	• Displays the PH temperature (in 1 °C increments).
SENSOR INFORMATION1	• Displays the input port status of the sensors and switches in hexadecimal numbers. • To be used for troubleshooting when troubles/jams occur. For allocating Bits for SENSOR INFORMATION 1 to 3, see the attached chart, “Sensor Information List.”
SENSOR INFORMATION2	
SENSOR INFORMATION3	
FUSER HEATER1 TEMPERATURE	• Displays the latest temperature on the middle of the heating roller (in 1°C increments).
FUSER HEATER2 TEMPERATURE	• Displays the latest temperature at the edges of the heating roller (in 1 °C increments).
IDC SENSOR1 PS	• Shows the latest IDC data. • Range of output: 0V to 9.99V (in 0.01V increments)
IDC SENSOR2 PS	
IDC SENSOR1 P	
IDC SENSOR2 P	
TONER LEVEL SENSOR C	• Displays the number of times the toner level sensor has detected an empty condition during one cycle of developer agitation. • Range of output: 0 to 200 (in increments of one time)
TONER LEVEL SENSOR M	
TONER LEVEL SENSOR Y	
TONER LEVEL SENSOR K	
VDC VOLT C	• Displays the Vdc voltage of each color of toner. • Range of output: -1000V to 255V (in 1V increments)
VDC VOLT M	
VDC VOLT Y	
VDC VOLT K	
VPP VOLT C	• Displays the Vpp voltage of each color of toner. • Range of output: 700V to 2000V (in 1V increments)
VPP VOLT M	
VPP VOLT Y	
VPP VOLT K	
VPP VOLT LIMIT C	• Displays the limit value of Vpp voltage of each color of toner. • Range of output: 700V to 2000V (in 1V increments)
VPP VOLT LIMIT M	
VPP VOLT LIMIT Y	
VPP VOLT LIMIT K	
DUTY C	• Displays the duty ratio of each color of toner. • Range of output: 0% to 100.0% (in 0.1% increments)
DUTY M	
DUTY Y	
DUTY K	
IDC BASE REFLECTION1	• Displays the IDC intensity adjustment value. • Range of output: 0 to 1023 (in 1 increments)
IDC BASE REFLECTION2	
TRANS CURRENT2	• Displays the latest second image transfer output value. • Range of output: -800V to 5000V (in 1V increments)

Sensor Information List

- SENSOR INFORMATION 1

Bit	Part Name	Operation Characteristics	
		1	0
0	Tray2 media empty sensor	Paper present	Paper not present
1	Tray1 media empty sensor	Paper present	Paper not present
2	Media empty sensor (Lower feeder unit)	Paper present	Paper not present
3	—	—	—
4	Registration sensor	Paper present	Paper not present
5	Media loop sensor	Paper present	Paper not present
6	—	—	—
7	Exit sensor/1		
8	—	—	—
9	Media full sensor	Paper present	Paper not present
10	Duplex transport sensor	Paper present	Paper not present
11	Media feed sensor (Lower feeder unit)	Paper present	Paper not present
12	—	—	—
13	—	—	—

- SENSOR INFORMATION 2

Bit	Part Name	Operation Characteristics	
		1	0
0	Front door switch	Close	Open
1	Right door switch	Close	Open
2	—	—	—
3	—	—	—
4	Right door sensor (Lower feeder unit)	Close	Open
5	—	—	—
6	—	—	—
7	—	—	—
8	—	—	—
9	—	—	—
10	—	—	—
11	—	—	—
12	Monitor of 24V	ON	OFF
13	—	—	—

- SENSOR INFORMATION 3

Bit	Part Name	Operation Characteristics	
		1	0
0	1st image transfer retraction position sensor	Not retracted	Retracted
1	2nd image transfer retraction position sensor	Not retracted	Retracted
2	Tray2 set switch	In position	Out of position
3	—	—	—
4	—	—	—
5	Media size switch (1)	ON	OFF
6	Media size switch (2)	ON	OFF
7	Media size switch (3)	ON	OFF
8	—	—	—
9	—	—	—
10	—	—	—
11	Waste toner sensor	Full	Not full
12	OHP sensor	OHP	Not OHP
13	—	—	—

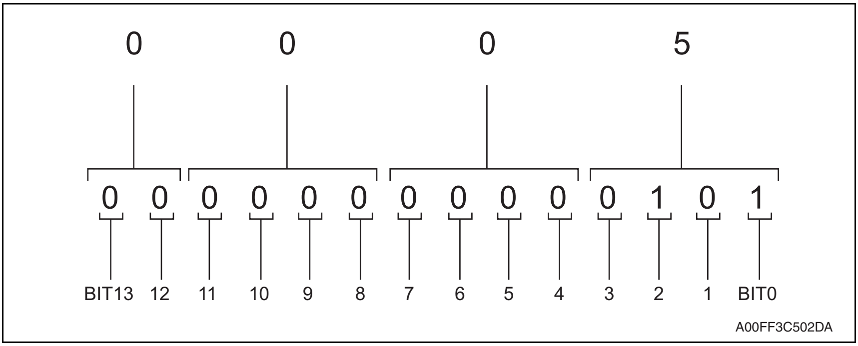
(1) How to Read Sensor Information

- Convert the numerical value of the hexadecimal number printed on [Engine Element Data Information] into the binary number, it compares with the allocation of each BIT, and the status of the sensor is confirmed.

ex. When “SENSOR INFORMATION1” is displayed as 0x0005.

1. Convert four end digits “0005” of 0x0005 into the binary number (14 digits).

2. The BIT number is allocated in converted value “00000000000101.”
(BIT0 to BIT13 is sequentially allocated from the first digit.)



3. In this case, because BIT No. “0” and “2” become “1”, so it can be confirmed that the tray2 media empty sensor is “Paper present” state and the media empty sensor is “Paper present” states from the Sensor Information table.

(2) Conversion method from hexadecimal number to binary number

1. The hexadecimal number (four digits) is converted in each digit based on the following table.

Hexadecimal number	Binary number	Hexadecimal number	Binary number	Hexadecimal number	Binary number	Hexadecimal number	Binary number
0	0000	4	0100	8	1000	C	1100
1	0001	5	0101	9	1001	D	1101
2	0010	6	0110	A	1010	E	1110
3	0011	7	0111	B	1011	F	1111

2. Match the converted numerical value of four digits, then two head digits are excluded and it is assumed the binary number of 14 digits.

D. HALFTONE 64

Function	• Prints the halftone pattern with 25% level for CMYK respectively.
Use	• To check the unevenness of the density and the pitch.
Setting/ procedure	1. Call the service mode to the display. 2. Select [PS/PCL] → [PRINT MENU] → [HALFTONE 64] and press the Select key. 3. Select desired color with the up key ▲/down key ▼ and press the Select key. 4. Select [PRINT] and press the Select key.

E. HALFTONE 128

Function	• Prints the halftone pattern with 50% level for CMYK respectively.
Use	• To check the unevenness of the density and the pitch.
Setting/ procedure	1. Call the service mode to the display. 2. Select [PS/PCL] → [PRINT MENU] → [HALFTONE 128] and press the Select key. 3. Select desired color with the up key ▲/down key ▼ and press the Select key. 4. Select [PRINT] and press the Select key.

F. HALFTONE 256

Function	• Prints the halftone pattern with 100% level for CMYK respectively.
Use	• To check the unevenness of the density and the pitch.
Setting/ procedure	1. Call the service mode to the display. 2. Select [PS/PCL] → [PRINT MENU] → [HALFTONE 256] and press the Select key. 3. Select desired color with the up key ▲/down key ▼ and press the Select key. 4. Select [PRINT] and press the Select key.

G. GRADATION

Function	• Prints the gradation pattern.
Use	• To check the gradation reproductively.
Setting/ procedure	1. Call the service mode to the display. 2. Select [PS/PCL] → [PRINT MENU] → [GRADATION] and press the Select key. 3. Select [PRINT] and press the Select key.

14.14.2 SOFT SWITCH

Function	• Not used.
Use	
Setting/ procedure	

15. SOFT SWITCH set

15.1 Description

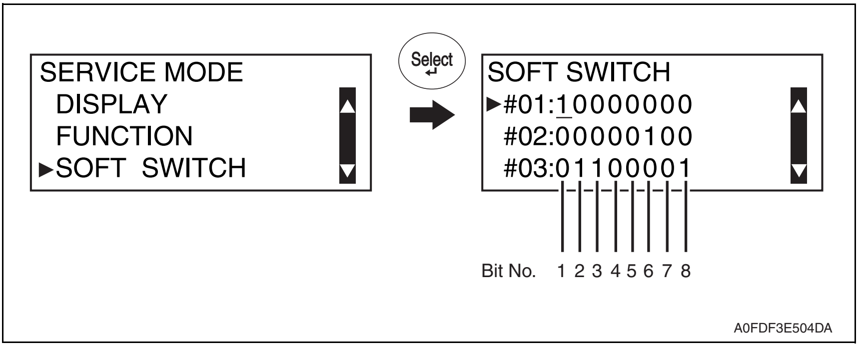
This machine is equipped with totally 64 soft switches that are used for fax adjustment in order to conform to the standard of each country.
The default setting is changeable.

The default setting of soft switch is automatically changed according to the following settings.

- The marketing area is set in procedures of [UTILITY] → [ADMIN. MANAGEMENT] → [USER SETTING] → [PTT SETTING].
- The marketing area is set at [PTT Setting] by using LSU utility software.
- When the setting is made in the procedures of [SERVICE MODE] → [CLEAR DATA] → [SRAM CLEAR], the default setting is defined according to the current setting of marketing area.

Bit No. can be changed with the following way.

- [SOFT SWITCH] of [SERVICE MODE].
  See P.221



Hex-binary conversion list		HEX															
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Bit No.	4 (8)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	3 (7)	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
	2 (6)	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
	1 (5)	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1

15.2 Default setting

15.2.1 Country for each marketing area

NOTE

- **A different country may be applicable depending on the communications standard.**
- **The marketing area settings is set in the procedure of [UTILITY] → [ADMIN. MANAGEMENT] → [USER SETTING] → [PTT SETTING].**
  See P.149

15.2.2 Soft switch list

Soft Switch No.	Bit No.	Designation	Page No.
#01	2/1	V.34 CI signal byte number	P.264
#02	8/7	Time between phase C to phase D signal in V.17	P.265
	6	Header TX selection open to user	
	3/2	Transmit RTN signal level criteria	
	1	Sent N.G page	
#03	8	Send out NSF frame with station ID	P.266
	7	Number of Pause within phone number	
	6	Re-dial prohibit for NO ANSWER	
	4/3/2/1	RX level setting	
#04	4	Visible alarm for RTN signal	P.267
	3	Audible alarm for RTN signal	
#05	8/7	Push button ON/OFF Timing (PB)	P.268
	6/5	Relation between 10 key # & No.of dial pulse	
	3	10PPS/20PPS	
	2/1	PPS ratio	
#06	8/7	Ring on time to ignore ring off time at 1st cycle	P.269
	4/3	Ring off time at 1st cycle to approve incoming ring	
#07	8	Dial tone or busy tone detection	P.269
	7	PSTN/PBX setting	
	6	PBX dial tone detect	
	5	Dial mode select	
	4/3/2/1	TX level select for PSK/FSK	
#08	7	Detect busy tone after dialing	P.270
	6	Sending CED signal after connection	
#09	8/7	Ringer frequency detection	P.270
	5	TSI/CSI append “+”	
	2/1	Time from RX DIS signal to send DCS signal	
#10	8	Print out RTN page report	P.271
	7	Confirmation report result field	
	6/5	Get gap time between digit for pulse dial	
	4	RX PIP T.30 command after send out MPS command	
	3	Received DIS signal within reception	
	2	Transmission time limitation	
	1	Audio alarm after communication fail	
#11	7	Detect dial tone after pre-fix number	P.272
	6	Pulse dial allowed to select	
	5	Protocol signal display mode	
	2	USB port number fixed	
	1	DTMF low frequency compensation	

Soft Switch No.	Bit No.	Designation	Page No.
#12	8	ECM mode capability	P.273
	7/6	V.34 fall back counter for V.34 TX	
	5	Send CTC after 4th PPR	
	3	Send EOR after lowest speed	
	2/1	TCF transmission timing after DCS signal	
#13	8	MR capability for G3	P.274
	7/6	Delay time between transaction	
	5	Super fine printing capability for receiving	
	3	DTS mode	
	2	Send DTC signal if RX DIS signal in manual RX mode (no function on G4)	
#14	6	Memory size level to RX	P.274
	3/2/1	Time between V.34 ANSam signal and FSK DIS signal	
#15	8	IPSEL1	P.275
	7	DCSEL	
	6	DCLIM	
#16	2/1	Fax communication coding method	P.275
#17	6	CED frequency	P.276
	5/4/3	Pause between off hook and CED signal	
	2/1	Inactivity timer [T5]	
#18	6/5	G3 mode training quality level	P.277
	4/3/2/1	Redefine re-dial attempts counter	
#19	8/7/6/5	CNG signal level	P.278
	4/3/2/1	DTMF high frequency level	
#20	—	Reserved	P.278
#21	8	NSS signal before DCS	P.279
	7/6	CNG sending duration after dialing	
	5	T4 timer	
	4	VOIP (Voice over IP)	
	3	DIS signal length	
	2/1	Increase default T1 timing during calling (Only for TX function)	
#22	4/3/2/1	CED signal output level	P.280
#23	4/3/2/1	DTMF low frequency level	P.280
#24	7/6/5/4/ 3/2/1	Re-dial interval	P.281
#25	4/3	Flash key time	P.283
#26	8/7	Dial tone detection time before disconnected	P.284
#27	—	Reserved	P.284
#28	8/7/6/5	Time to dial after dial tone on the line	P.285
	4/3/2/1	CED duration time within calling period	
#29	5/4/3/2/1	Time to dial after seize the line when dial tone detection	P.286

Soft Switch No.	Bit No.	Designation	Page No.
#30	8/7	Pause delay time within digits	P.287
	6/5/4/3/2/1	Signal tone insensitivity (dBm) after dial for busy tone	
#31	7/6/5	Min re-dial interval	P.288
	4/3/2/1	Max. re-dial attempts	
#32	—	Reserved	P.288
#33	7	V.17 Echo protection tone	P.289
	6	V.29 Echo protection tone	
	5	Compromise equalize enable (CEQ) in the transmit path (TCEQ)	
	4	Compromise equalize enable (CEQ) in the receiver path (RCEQ)	
#34	—	Reserved	P.289
#35	8/7	Dial tone table switch time	P.290
	6/5/4	Dial tone frequency upper range index	
	3/2/1	Dial tone frequency low range index	
#36	8	Re-dial attempts continue fail counter (Using for detect line problem error)	P.291
	4/3/2/1	Re-dial attempts fail limitation counter (Using for detect line problem error)	
#37	7	Auto dial learning for V.34 modem	P.292
	6/5/4	RX start symbol rate for V.34 modem	
	3/2/1	TX start symbol rate for V.34 modem	
#38	7	Set/Reset V.34 transmit level deviation	P.292
	6/5	V.34 flag number between ECM frame	
	4	Phase 2 guard tone power level (V.34)	
	1	V.8 /V.34 capability	
#39	8	Disable V.34 TX for V.34 modem	P.293
	7	Disable V.34 RX for V.34 modem	
	6/5	Flags number in FSK frame for V.34 modem	
	4	Manual TX mode for V.34 modem	
	3	Switch from V.17 to V.34 if DIS Bit 6 set after received DIS	
	2/1	Delay time in primary channel for V.34 transmit after CFR or MCF signal	
#40	8/7/6/5	V.17 RX start speed select receiving start speed for V.17	P.294
	3/2/1	V.34 RX start speed prohibit V.34 mode when upper speed less	
#41	8/7/6/5	V.17 TX start speed select receiving start speed for V.17	P.295
	3/2/1	V.34 TX start speed prohibit V.34 mode when upper speed less	
#42	8/7/6/5/4/3/2/1	C-MODE	P.296
#43	8/7/6/5/4/3/2/1	C-MODE	P.296
#44	—	Reserved	P.296

Soft Switch No.	Bit No.	Designation	Page No.
#45	5	Call transfer	P.297
	4/3/2/1	No. of call transfer	
#46	8	Daylight savings timer	P.297
	4	RX print mode	
	3	Default TX mode	
	2	Header for FAX TX	
	1	Print model name on top of TX page if name not register	
#47	6	RX mode	P.298
	5	Footer	
#48	8	Activity report	P.298
	7/6	TX result report	
	5/4	RX result report	
#49	5	Re-dial method if Comm. Fail	P.299
	4/3/2/1	No. of rings	
#50	8	Transmit or cancel after time out in “Memory TX”	P.299
#51	4/3	T30 monitor report selection	P.300
	2	Send unsent page mode for memory transmission	
#52	—	Reserved	P.300
#53	—	Reserved	P.301
#54	8	Report Date/Time type	P.301
	7/6	Report Date/Time format	
	5/4	Memory near full capacity for Fax and I-Fax scanning	
	3/2	Memory near full capacity for N-Scan scanning	
#55	—	Reserved	P.302
#56	—	Reserved	P.302
#57	—	Reserved	P.302
#58	8	Time out from PSK to FSK delay time	P.303
#59	6/5/4/ 3/2/1	Time Between GMT (Greenwich Mean Time)	P.304
#60	6	Quick memory TX	P.307
	2	Off hook alarm after communication	
	1	Display destination selection within TX phase C	
#61	4/3/2/1	Max. No. of ring	P.307
#62	—	Reserved	P.308
#63	8	“#” key definition in PBX mode	P.308
	2	Fax TX image adjust	
	1	TX result report with image	
#64	6	Print RX error report in RX side if no any FAX signal detected	P.309
	5	10 PPS & 20 PPS selectable by user	

15.2.3 Default soft switch setting for each market area

A. Market area 1

Soft Switch No.	Marketing area																															
	U.S.A								United Kingdom								Argentina								Australia							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
#06	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	1	0
#07	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1
#08	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#09	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
#10	1	0	0	0	0	1	0	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1	1	1	1	1	1	1	0	1
#11	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	0	0	0	1	0	1	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0
#24	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	1
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	1	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Soft Switch No.	Marketing area																															
	U.S.A								United Kingdom								Argentina								Australia							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#38	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	1	0	1	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

B. Market area 2

Soft Switch No.	Marketing area																															
	Austria								Belgium								Brazil								Canada							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
#03	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#06	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
#08	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#10	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1
#11	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
#12	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#19	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
#24	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0

Soft Switch No.	Marketing area																															
	Austria								Belgium								Brazil								Canada							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	1
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	1	0	1	0	1	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

C. Market area 3

Soft Switch No.	Marketing area																															
	China								Czech								Denmark								Europe							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	1	0	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1
#06	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
#08	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#10	1	1	1	1	0	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1
#11	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#12	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	0	0	0	1	0	1	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0
#24	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	1	0	1	1	0	1	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0

Soft Switch No.	Marketing area																															
	China								Czech								Denmark								Europe							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

D. Market area 4

Soft Switch No.	Marketing area																															
	Finland								France								Germany								Greece							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1
#06	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
#08	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#10	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1
#11	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#12	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
#13	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0
#24	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0

Soft Switch No.	Marketing area																															
	Finland								France								Germany								Greece							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

E. Market area 5

Soft Switch No.	Marketing area																															
	Hong Kong								Hungary								Ireland								Israel							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0
#06	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0
#07	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
#08	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#09	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
#10	1	0	0	0	0	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1
#11	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	0	0	0	1	0	1	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0
#24	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	1	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0

Soft Switch No.	Marketing area																															
	Hong Kong								Hungary								Ireland								Israel							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

F. Market area 6

Soft Switch No.	Marketing area																															
	Italy								Korea								Malaysia								Mexico							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#06	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0
#08	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#09	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#10	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1
#11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	1	1	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
#24	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	1	0	1	0	1	0	0	0	1	0	1	1	0	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0

Soft Switch No.	Marketing area																															
	Italy								Korea								Malaysia								Mexico							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	1	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

G. Market area 7

Soft Switch No.	Marketing area																															
	Netherlands								New Zealand								Norway								Philippines							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	0	0	0	1	1	0	0	0	0	0	1	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0
#06	0	0	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	1	0	1	1	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
#08	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
#10	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1
#11	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	1	1	0	1	0	1	1	0	0	0	0	1	0	1	1	0	1	1	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0
#24	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	1	0	1	0	1	0	0	0	1	0	1	1	0	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0

Soft Switch No.	Marketing area																															
	Netherlands								New Zealand								Norway								Philippines							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	0	0	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

H. Market area 8

Soft Switch No.	Marketing area																															
	Poland								Portugal								Russia								Saudi Arabia							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
#06	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1
#08	0	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
#10	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1	1	1	1	1	0	1	1	1
#11	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#12	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
#13	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	0	0	0	1	0	1	1	0	1	1	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0
#24	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0

Soft Switch No.	Marketing area																															
	Poland								Portugal								Russia								Saudi Arabia							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

I. Market area 9

Soft Switch No.	Marketing area																															
	Singapore								Slovakia								South Africa								Spain							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
#06	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1
#08	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#09	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
#10	1	0	0	0	0	1	0	1	1	1	1	1	0	1	1	1	1	0	0	0	1	1	0	1	1	1	1	1	0	1	1	1
#11	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	0	1	1	0	0	1	1	0	1	1	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0
#24	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	1	0	0	0	1	0	1	1	0
#31	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0

Soft Switch No.	Marketing area																															
	Singapore								Slovakia								South Africa								Spain							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

J. Market area 10

Soft Switch No.	Marketing area																															
	Sweden								Switzerland								Taiwan								Turkey							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
#06	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1
#08	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
#10	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1	1	1	1	1	0	1	1	1
#11	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#12	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
#13	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0
#24	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	0	1	0	0	1	0	1	0	1	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0

Soft Switch No.	Marketing area																															
	Sweden								Switzerland								Taiwan								Turkey							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

K. Market area 11

Soft Switch No.	Marketing area							
	Vietnam							
	Bit No.							
	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	1	1
#04	0	0	1	1	0	0	0	0
#05	1	0	0	0	0	0	1	1
#06	0	0	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	1
#08	0	0	0	0	0	1	1	0
#09	0	0	0	0	1	0	0	0
#10	1	1	1	1	0	1	1	1
#11	1	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1
#13	0	0	1	0	1	0	0	0
#14	0	1	0	0	0	0	0	0
#15	0	0	0	0	1	1	0	1
#16	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0
#19	1	1	1	0	0	1	1	0
#20	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0
#23	1	1	0	0	0	0	0	0
#24	0	1	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0
#29	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0
#31	0	1	0	1	0	1	0	0
#32	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	0

Soft Switch No.	Marketing area							
	Vietnam							
	Bit No.							
	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0
#59	0	1	1	1	0	0	0	0
#60	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0

15.3 Soft switch definition

15.3.1 SOFT SWITCH: #01

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="6">Reserved</td><td rowspan="6">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>0</td><td rowspan="5">1</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td rowspan="2">V.34 CI signal byte number</td><td rowspan="2"><table><tr><th>Byte number</th><th>30 bytes</th><th>15 bytes</th><th>9 bytes</th><th>60 bytes</th></tr><tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>1</td><td>1</td></tr>
</table>

15.3.2 SOFT SWITCH: #02

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Time between phase C to phase D signal in V.17
Example:
Image → EOP</td><td rowspan="2"><table><tr><td>RX Insensitivity</td><td>70 ms</td><td>120 ms</td><td>180 ms</td><td>60 ms</td></tr><tr><td>Bit No. 8</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 7</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>Header TX selection open to user</td><td>0: No
1: Yes</td><td>0</td></tr>
<tr><td>5</td><td rowspan="2">Reserved</td><td rowspan="2">Reserved</td><td>0</td></tr>
<tr><td>4</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td rowspan="2">Transmit RTN signal level criteria</td><td rowspan="2"><table><tr><td>Percentage of error line</td><td>10%</td><td>15%</td><td>20%</td><td>25%</td></tr><tr><td>Bit No. 3</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 2</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>Sent N.G page</td><td>0: Send N.G page and up to 3 times for that page
1: Not re-send that N.G page for G3 mode</td><td>0</td></tr>
</table>

- Bit 1: N.G indicate our side detected RTN signal from other end. In this case machine can resend the same page up to three or just one time, and this use for G3 mode only.
- Bit 2-3: In G3 mode, if error line for each page, machine will send RTN instead of RTN, in this case, some machine will resend the same page again. The retry times depend on other end.
- Bit 6: If this bit set to “0”, the header select function can not change by user, only changeable by serviceman in service mode.

15.3.3 SOFT SWITCH: #03

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Send out NSF frame with station ID	**1: Yes** 0: No	1	8
7	Number of Pause within phone number	**0: No any limitation** 1: Max. up to 2 “P” within inputted telephone number	0	
6	Re-dial prohibit for NO ANSWER	**0: Continue to dial** 1: Not allowed to re-dial if no any FAX signal or detected busy tone after dialing	0	
5	Reserved	Reserved	0	
4	RX level setting	(see tables below)	0	6
3			1	
2			1	
1			0	

RX level	-49 dB	-48 dB	-47 dB	-46 dB	-45 dB
Bit No. 4	0	0	0	0	0
Bit No. 3	0	0	0	0	1
Bit No. 2	0	0	1	1	0
Bit No. 1	0	1	0	1	0

RX level	-44 dB	**-43 dB**	-42 dB	-41 dB	-40 dB
Bit No. 4	0	**0**	0	1	1
Bit No. 3	1	**1**	1	0	0
Bit No. 2	0	**1**	1	0	0
Bit No. 1	1	**0**	1	0	1

RX level	-39 dB	-38 dB	-37 dB	-36 dB
Bit No. 4	1	1	1	1
Bit No. 3	0	0	1	1
Bit No. 2	1	1	0	0
Bit No. 1	0	1	0	1

RX level	Reserved	
Bit No. 4	1	1
Bit No. 3	1	1
Bit No. 2	1	1
Bit No. 1	0	1

- Bit 8: This bit set to 1, the answer machine will send machine name by NSF frame after connection.
- Bit 7: Can input Pause key to insert pause time between digits, this can put more than one “P” at the end of telephone number to increase calling time (T) after calling. In this case can use “P” to increase T1 time during calling to other parties.

15.3.4 SOFT SWITCH: #04

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4	Visible alarm for RTN signal	0: No	1	C
		1: Yes - display message while sending / receiving RTN signal (RTN= Retrain Negative).		
3	Audible alarm for RTN signal	0: No	1	
		1: Yes - alarm for sending or receiving RTN signal.		
2	Reserved	Reserved	0	
1			0	

- Bit 3: The duration of alarm last 3 second after detect negative signal in G3 mode.
- Bit 4: The display message will keep on LCD 3 seconds or until next incoming T30 signal.

15.3.5 SOFT SWITCH: #05

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Push button ON/OFF Timing (PB)</td><td rowspan="2">
<table>
<tr><td>Timing (ms)</td><td>ON: 100
OFF: 140</td><td>ON: 70
OFF: 70</td><td>ON: 70
OFF: 140</td><td>ON: 90
OFF: 90</td></tr>
<tr><td>Bit No. 8</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td rowspan="2">Relation between 10 key # & No.of dial pulse</td><td rowspan="2">
<table>
<tr><td>#1</td><td>1</td><td>2</td><td>9</td><td rowspan="10">Reserved</td></tr>
<tr><td>#2</td><td>2</td><td>3</td><td>8</td></tr>
<tr><td>#3</td><td>3</td><td>4</td><td>7</td></tr>
<tr><td>#4</td><td>4</td><td>5</td><td>6</td></tr>
<tr><td>#5</td><td>5</td><td>6</td><td>5</td></tr>
<tr><td>#6</td><td>6</td><td>7</td><td>4</td></tr>
<tr><td>#7</td><td>7</td><td>8</td><td>3</td></tr>
<tr><td>#8</td><td>8</td><td>9</td><td>2</td></tr>
<tr><td>#9</td><td>9</td><td>10</td><td>1</td></tr>
<tr><td>#0</td><td>10</td><td>1</td><td>10</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>10PPS/20PPS</td><td>0: 10PPS
1: 20PPS</td><td>0</td></tr>
<tr><td>2</td><td rowspan="2">PPS ratio</td><td rowspan="2">
<table>
<tr><td>PPS ratio (%)</td><td>33</td><td>40</td><td>30</td><td>Reserved</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

15.3.6 SOFT SWITCH: #06

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Ring on time to ignore ring off time at 1st cycle</td><td rowspan="2">
<table>
<tr><td>Timing (ms)</td><td>50 ms</td><td>100 ms</td><td>150 ms</td><td>800 ms</td></tr>
<tr><td>Bit No. 8</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="4">4</td></tr>
<tr><td>7</td><td>1</td></tr>
<tr><td>6</td><td rowspan="2">Reserved</td><td rowspan="2">Reserved</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="2">Ring off time at 1st cycle to approve incoming ring</td><td rowspan="2">
<table>
<tr><td>Timing (ms)</td><td>100 ms</td><td>250 ms</td><td>500 ms</td><td>1000 ms</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>1</td><td rowspan="4">C</td></tr>
<tr><td>3</td><td>1</td></tr>
<tr><td>2</td><td rowspan="2">Reserved</td><td rowspan="2">Reserved</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

15.3.7 SOFT SWITCH: #07

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Dial tone or busy tone detection</td><td>0: Disable
1: Enable - Detect dial tone before dial</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>PSTN/PBX setting</td><td>0: PSTN
1: PBX - Select PBX line type</td><td>0</td></tr>
<tr><td>6</td><td>PBX dial tone detect</td><td>0: Not to detect dial tone before pre-fix number
1: Detect dial tone before the pre-fix number in PBX mode</td><td>0</td></tr>
<tr><td>5</td><td>Dial mode select</td><td>0: DTMF - PB
1: Pulse - DP</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">TX level select for PSK/FSK</td><td rowspan="4">
<table>
<tr><td>Level (dBm)</td><td>-17</td><td>-16</td><td>-15</td><td>-14</td><td>-13</td><td>-12</td><td>-11</td><td>-10</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Level (dBm)</td><td>-9</td><td>-8</td><td>-7</td><td>-6</td><td>-5</td><td>-4</td><td>-3</td><td>-2</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>1</td><td rowspan="4">8</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

15.3.8 SOFT SWITCH: #08

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	6
7	Detect busy tone after dialing	0: Not to detect **1: Detect busy tone after dialing**	1	
6	Sending CED signal after connection	0: Not to send **1: Send CED signal before DIS signal after connection**	1	
5	Reserved	Reserved	0	
4			0	0
3			0	
2			0	
1			0	

15.3.9 SOFT SWITCH: #09

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Ringer frequency detection</td><td rowspan="2"><table>
<tr><td>Ringer frequency range (Hz)</td><td>10 to 75</td><td>20 to 57.5</td><td>20 to 75</td><td>10 to 75</td></tr>
<tr><td>Bit No. 8</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>5</td><td>TSI/CSI append “+”</td><td>0: Not append “+” before send out TSI/CSI
1: Automatically insert “+”</td><td>0</td></tr>
<tr><td>4</td><td rowspan="2">Reserved</td><td rowspan="2">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td rowspan="2">Time from RX DIS signal to send DCS signal</td><td rowspan="2"><table>
<tr><td>Description</td><td>70 ms</td><td>120 ms</td><td>180 ms</td><td>240 ms</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 5: This bit set to “1”, the “+” character will put in the first position on CSI and TSI command.

15.3.10 SOFT SWITCH: #10

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td rowspan="2">8</td><td rowspan="2">Print out RTN page report</td><td>0: Not to print</td><td rowspan="2">1</td><td rowspan="6">A</td></tr>
<tr><td>1: Print out RTN page report after transaction for TX/ RX RTN signal</td></tr>
<tr><td rowspan="2">7</td><td rowspan="2">Confirmation report result field</td><td>0: Print “OK”</td><td rowspan="2">0</td></tr>
<tr><td>1: Print “NG” in case of sending or receiving RTN signal</td></tr>
<tr><td>6</td><td rowspan="2">Get gap time between digit for pulse dial</td><td rowspan="2"><table><tr><td>Value (ms)</td><td>550</td><td>650</td><td>750</td><td>850</td></tr><tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>1</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td rowspan="2">4</td><td rowspan="2">RX PIP T.30 command after send out MPS command</td><td>0: Send DCS at current speed</td><td rowspan="2">0</td><td rowspan="8">1</td></tr>
<tr><td>1: Return to Tx phase B waiting for DIS signal</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">Received DIS signal within reception</td><td>0: Repeat sending DIS/DTC again until time out</td><td rowspan="2">0</td></tr>
<tr><td>1: Disconnected after sending DCN signal</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">Transmission time limitation</td><td>1: Limit to 8 minutes from data phase</td><td rowspan="2">0</td></tr>
<tr><td>0: No any limitation until document jam</td></tr>
<tr><td rowspan="2">1</td><td rowspan="2">Audio alarm after communication fail</td><td>0: Not to alarm after transaction fail</td><td rowspan="2">1</td></tr>
<tr><td>1: Alarm 3 seconds after disconnected</td></tr>
</table>

- Bit 8: If this bit set to 1, machine will print out confirmation report after each transaction.
- Bit 7: If this bit set to 1, the result field will show “NG” instead of “OK” in the confirmation report and activity report or checking the result on the LCD.
- Bit 2: This for manual TX only.

15.3.11 SOFT SWITCH: #11

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	2
7	Detect dial tone after pre-fix number	**0: No** 1: Yes	0	
6	Pulse dial allowed to select	0: Yes **1: Not allowed**	1	
5	Protocol signal display mode	**0: Not to display** 1: Display V8 or T30 command within communication.	0	
4	Reserved	Reserved	0	0
3			0	
2	USB port number fixed	**0: OFF** 1: ON	0	
1	DTMF low frequency compensation	**0: Base on SW23 (1 to 4)** 1: High 0.5 dB	0	

- Bit 6: If this bit set to 1, not allowed user to select pulse dial, and this function open serviceman to change.
- Bit 5: Bit set to 1, LCD will show the command between each party, the detail specification see service mode specification.

15.3.12 SOFT SWITCH: #12

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>ECM mode capability</td><td>1: Yes
0: No - also disable V.34 modem capability</td><td>1</td><td rowspan="4">8</td></tr>
<tr><td>7</td><td rowspan="2">V.34 fall back counter for V.34 TX</td><td rowspan="2"><table><tr><td>Counter</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>Bit No. 7</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 6</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>Send CTC after 4th PPR</td><td>0: Send CTC (Continue To Correct)
1: Send EOR (End Of Transmission)</td><td>0</td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>Send EOR after low-est speed</td><td>0: Send DCN (Re-dial)
1: Send EOR_xxx [Germany PTT]</td><td>0</td></tr>
<tr><td>2</td><td rowspan="2">TCF transmission tim-ing after DCS signal</td><td rowspan="2"><table><tr><td>Description (ms)</td><td>70</td><td>80</td><td>90</td><td>100</td></tr><tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 1-2: Delay time from FSK mode to PSK mode, this use for G3 mode only, V.34 do not need this setting.
- Bit 6-7: If counter equal “1”, machine will down to next lower speed for next data phase.

15.3.13 SOFT SWITCH: #13

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td rowspan="2">8</td><td rowspan="2">MR capability for G3</td><td>0: Yes</td><td rowspan="2">0</td><td rowspan="6">1</td></tr>
<tr><td>1: No</td></tr>
<tr><td>7</td><td rowspan="2">Delay time between transaction</td><td rowspan="2"><table><tr><td>Description (sec)</td><td>20</td><td>60</td><td>120</td><td>240</td></tr><tr><td>Bit No. 7</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 6</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td rowspan="2">5</td><td rowspan="2">Super fine printing capability for receiving</td><td>0: No</td><td rowspan="2">1</td></tr>
<tr><td>1: Yes</td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="6">0</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">DTS mode</td><td>0: No</td><td rowspan="2">0</td></tr>
<tr><td>1: Yes</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">Send DTC signal if RX DIS signal in manual RX mode
(no function on G4)</td><td>1: No - send DIS again</td><td rowspan="2">0</td></tr>
<tr><td>0: Yes</td></tr>
<tr><td>1</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
</table>

- Bit 7-6: If set to 1, the time between each transaction will become longer, in this case machine will wait more time before start to dial next transaction.

15.3.14 SOFT SWITCH: #14

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Reserved</td><td rowspan="2">Reserved</td><td>0</td><td rowspan="5">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td rowspan="2">6</td><td rowspan="2">Memory size level to RX</td><td>1: Up to 128 KB</td><td rowspan="2">0</td></tr>
<tr><td>0: Base on system configuration</td></tr>
<tr><td>5</td><td rowspan="2">Reserved</td><td rowspan="2">Reserved</td><td>0</td></tr>
<tr><td>4</td><td>0</td><td rowspan="4">2</td></tr>
<tr><td>3</td><td rowspan="3">Time between V.34 ANSam signal and FSK DIS signal</td><td rowspan="3"><table><tr><td>Timer (ms)</td><td>430</td><td>440</td><td>450</td><td>460</td><td>470</td><td>480</td><td>490</td><td>500</td></tr><tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>2</td><td>1</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 6: If set to 1, machine will become manual RX mode if available memory size less than 128 K.

15.3.15 SOFT SWITCH: #15

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	IPSEL1	**0: Close the IPSEL1 port** 1: Active the IPSEL1 port	0	0
7	DCSEL	**0: Close the DCSEL port** 1: Active the DCSEL port	0	
6	DCLIM	**0: Close the DCLIM port** 1: Active the DCLIM port	0	
5	Reserved	Reserved	0	
4			0	0
3			0	
2			0	
1			0	

15.3.16 SOFT SWITCH: #16

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	3
3			0	
2	Fax communication coding method	See table below	1	
1			1	

Coding method	MMR	MR	MH	**JBIG**
Bit No. 2	0	0	1	**1**
Bit No. 1	0	1	0	**1**

15.3.17 SOFT SWITCH: #17

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Reserved</td><td rowspan="2">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>CED frequency</td><td>0: 2100 Hz
1: 1100 Hz</td><td>0</td></tr>
<tr><td>5</td><td rowspan="3">Pause between off hook and CED signal</td><td rowspan="3">
<table>
<tr><td>Time (T)</td><td>T=1.8 sec to 2.5 sec</td><td>T+ 100 ms</td><td>T+ 200 ms</td><td>T+ 300 ms</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Time (T)</td><td>T+ 400 ms</td><td>T+ 500 ms</td><td>T+ 600 ms</td><td>T+ 700 ms</td></tr>
<tr><td>Bit No. 5</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td></tr>
<tr><td>4</td><td>0</td><td rowspan="5">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td rowspan="2">Inactivity timer [T5]</td><td rowspan="2">
<table>
<tr><td>Description</td><td>T5</td><td>T5 + 20 sec</td><td>T5 + 40 sec</td><td>T5 + 60 sec</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- T5: 60 ± 5 sec. in ITU-T standard

15.3.18 SOFT SWITCH: #18

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Reserved</td><td rowspan="2">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td rowspan="2">G3 mode training quality level</td><td rowspan="2"><table>
<tr><td>Definition</td><td>Level1</td><td>Level2</td><td>Level3</td><td>Level4</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">Redefine re-dial attempts counter</td><td rowspan="4"><table>
<tr><td>Counter</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr>
</table>
<table>
<tr><td>Counter</td><td colspan="5">Reserved</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>0</td><td rowspan="4">1</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>1</td></tr>
</table>

- Bit 5-6: Level 1 training check phases are not so severe than level 2,3,4. Level 2,3,4 can keep higher RX speed communication than level 1 for poor line condition.

15.3.19 SOFT SWITCH: #19

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	CNG signal level		0	6
7			1	
6			1	
5			0	
4	DTMF high frequency level		1	8
3			0	
2			0	
1			0	

CNG signal level (Bits 8–5):

Level (dBm)	-17	-16	-15	-14	-13	-12	**-11**	-10
Bit No. 8	0	0	0	0	0	0	**0**	0
Bit No. 7	0	0	0	0	1	1	**1**	1
Bit No. 6	0	0	1	1	0	0	**1**	1
Bit No. 5	0	1	0	1	0	1	**0**	1

Level (dBm)	-9	-8	-7	-6	-5	-4	-3	-2
Bit No. 8	1	1	1	1	1	1	1	1
Bit No. 7	0	0	0	0	1	1	1	1
Bit No. 6	0	0	1	1	0	0	1	1
Bit No. 5	0	1	0	1	0	1	0	1

DTMF high frequency level (Bits 4–1):

Level (dBm)	-17	-16	-15	-14	-13	-12	-11	-10
Bit No. 4	0	0	0	0	0	0	0	0
Bit No. 3	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1

Level (dBm)	**-9**	-8	-7	-6	-5	-4	-3	-2
Bit No. 4	**1**	1	1	1	1	1	1	1
Bit No. 3	**0**	0	0	0	1	1	1	1
Bit No. 2	**0**	0	1	1	0	0	1	1
Bit No. 1	**0**	1	0	1	0	1	0	1

15.3.20 SOFT SWITCH: #20

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

15.3.21 SOFT SWITCH: #21

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td rowspan="2">8</td><td rowspan="2">NSS signal before DCS</td><td>0: Not to send NSS signal for self mode in TX mode</td><td rowspan="2">1</td><td rowspan="7">8</td></tr>
<tr><td>1: Send NSS signal if remote side is same model</td></tr>
<tr><td>7</td><td rowspan="2">CNG sending duration after dialing</td><td rowspan="2"><table><tr><td>Duration (unit=sec)</td><td>40</td><td>60</td><td>70</td><td>120</td></tr><tr><td>Bit No. 7</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 6</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td rowspan="2">5</td><td rowspan="2">T4 timer</td><td>0: 3.0 sec. Normal case</td><td rowspan="2">0</td></tr>
<tr><td>1: 4.5 sec.</td></tr>
<tr><td rowspan="2">4</td><td rowspan="2">VOIP
(Voice over IP)</td><td>0: Disable</td><td rowspan="2">0</td></tr>
<tr><td>1: Enable</td><td rowspan="6">0</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">DIS signal length</td><td>0: Normal length (Bit 1 to 64)</td><td rowspan="2">0</td></tr>
<tr><td>1: 4 bytes DIS command. bit 1 to 32 only</td></tr>
<tr><td>2</td><td rowspan="2">Increase default T1 timing during calling (Only for TX function)</td><td rowspan="2"><table><tr><td>Description (sec)</td><td>T1</td><td>T1 + 30</td><td>T1 + 40</td><td>T1 + 60</td></tr><tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 1-2: T1 indicate the calling time after dialing, can adjust the T1 time more long by change the default value. The default T1 timer depends on each country regulation.
- Bit 3: Some old machine can not accept DIS command over 4 bytes, and every time will become fail. In this case can set this bit to 1. If this bit set to 1, JBIG and V8 capability will disable automatically.
- Bit 8: Sender machine's name will show on the other party's LCD or print on the report if remote side is the same model.

15.3.22 SOFT SWITCH: #22

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="4">Reserved</td><td rowspan="4">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">CED signal output level</td><td rowspan="4">
<table>
<tr><td>Level (dBm)</td><td>-17</td><td>-16</td><td>-15</td><td>-14</td><td>-13</td><td>-12</td><td>-11</td><td>-10</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Level (dBm)</td><td>-9</td><td>-8</td><td>-7</td><td>-6</td><td>-5</td><td>-4</td><td>-3</td><td>-2</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="4">6</td></tr>
<tr><td>3</td><td>1</td></tr>
<tr><td>2</td><td>1</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

15.3.23 SOFT SWITCH: #23

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="4">Reserved</td><td rowspan="4">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">DTMF low frequency level</td><td rowspan="4">
<table>
<tr><td>Level (dBm)</td><td>-15</td><td>-14</td><td>-13</td><td>-12</td><td>-11</td><td>-10</td><td>-9</td><td>-8</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Level (dBm)</td><td>-7</td><td>-6</td><td>-5</td><td>-4</td><td>-3</td><td>-2</td><td>-1</td><td>0</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="4">4</td></tr>
<tr><td>3</td><td>1</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

15.3.24 SOFT SWITCH: #24 (Part 1)

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7	Re-dial interval	(see tables below)	0	
6			0	
5			0	
4			0	2
3			0	
2			1	
1			0	

Interval (min.)	Reserved		**2**	3	4	5	6	7	8	9	10
Bit No. 7	0	0	**0**	0	0	0	0	0	0	0	0
Bit No. 6	0	0	**0**	0	0	0	0	0	0	0	0
Bit No. 5	0	0	**0**	0	0	0	0	0	0	0	0
Bit No. 4	0	0	**0**	0	0	0	0	0	1	1	1
Bit No. 3	0	0	**0**	0	1	1	1	1	0	0	0
Bit No. 2	0	0	**1**	1	0	0	1	1	0	0	1
Bit No. 1	0	1	**0**	1	0	1	0	1	0	1	0

Interval (min.)	11	12	13	14	15	16	17	18	19	20
Bit No. 7	0	0	0	0	0	0	0	0	0	0
Bit No. 6	0	0	0	0	0	0	0	0	0	0
Bit No. 5	0	0	0	0	0	1	1	1	1	1
Bit No. 4	1	1	1	1	1	0	0	0	0	0
Bit No. 3	0	1	1	1	1	0	0	0	0	1
Bit No. 2	1	0	0	1	1	0	0	1	1	0
Bit No. 1	1	0	1	0	1	0	1	0	1	0

Interval (min.)	21	22	23	24	25	26	27	28	29	30
Bit No. 7	0	0	0	0	0	0	0	0	0	0
Bit No. 6	0	0	0	0	0	0	0	0	0	0
Bit No. 5	1	1	1	1	1	1	1	1	1	1
Bit No. 4	0	0	0	1	1	1	1	1	1	1
Bit No. 3	1	1	1	0	0	0	0	1	1	1
Bit No. 2	0	1	1	0	0	1	1	0	0	1
Bit No. 1	1	0	1	0	1	0	1	0	1	0

Interval (min.)	31	32	33	34	35	36	37	38	39	40
Bit No. 7	0	0	0	0	0	0	0	0	0	0
Bit No. 6	0	1	1	1	1	1	1	1	1	1
Bit No. 5	1	0	0	0	0	0	0	0	0	0
Bit No. 4	1	0	0	0	0	0	0	0	0	1
Bit No. 3	1	0	0	0	0	1	1	1	1	0
Bit No. 2	1	0	0	1	1	0	0	1	1	0
Bit No. 1	1	0	1	0	1	0	1	0	1	0

Interval (min.)	41	42	43	44	45	46	47	48	49	50
Bit No. 7	0	0	0	0	0	0	0	0	0	0
Bit No. 6	1	1	1	1	1	1	1	1	1	1
Bit No. 5	0	0	0	0	0	0	0	1	1	1
Bit No. 4	1	1	1	1	1	1	1	0	0	0
Bit No. 3	0	0	0	1	1	1	1	0	0	0
Bit No. 2	0	1	1	0	0	1	1	0	0	1
Bit No. 1	1	0	1	0	1	0	1	0	1	0

15.3.25 SOFT SWITCH: #24 (Part 2)

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
7	Re-dial interval	(see tables below)	0	
6			0	
5			0	
4			0	2
3			0	
2			1	
1			0	

Interval (min.)	51	52	53	54	55	56	57	58	59	60
Bit No. 7	0	0	0	0	0	0	0	0	0	0
Bit No. 6	1	1	1	1	1	1	1	1	1	1
Bit No. 5	1	1	1	1	1	1	1	1	1	1
Bit No. 4	0	0	0	0	0	1	1	1	1	1
Bit No. 3	0	1	1	1	1	0	0	0	0	1
Bit No. 2	1	0	0	1	1	0	0	1	1	0
Bit No. 1	1	0	1	0	1	0	1	0	1	0

Interval (min.)	61	62	63	64	65	66	67	68	69	70
Bit No. 7	0	0	0	1	1	1	1	1	1	1
Bit No. 6	1	1	1	0	0	0	0	0	0	0
Bit No. 5	1	1	1	0	0	0	0	0	0	0
Bit No. 4	1	1	1	0	0	0	0	0	0	0
Bit No. 3	1	1	1	0	0	0	0	1	1	1
Bit No. 2	0	1	1	0	0	1	1	0	0	1
Bit No. 1	1	0	1	0	1	0	1	0	1	0

Interval (min.)	71	72	73	74	75	76	77	78	79	80
Bit No. 7	1	1	1	1	1	1	1	1	1	1
Bit No. 6	0	0	0	0	0	0	0	0	0	0
Bit No. 5	0	0	0	0	0	0	0	0	0	1
Bit No. 4	0	1	1	1	1	1	1	1	1	0
Bit No. 3	1	0	0	0	0	1	1	1	1	0
Bit No. 2	1	0	0	1	1	0	0	1	1	0
Bit No. 1	1	0	1	0	1	0	1	0	1	0

Interval (min.)	81	82	83	84	85	86	87	88	89	90
Bit No. 7	1	1	1	1	1	1	1	1	1	1
Bit No. 6	0	0	0	0	0	0	0	0	0	0
Bit No. 5	1	1	1	1	1	1	1	1	1	1
Bit No. 4	0	0	0	0	0	0	0	1	1	1
Bit No. 3	0	0	0	1	1	1	1	0	0	0
Bit No. 2	0	1	1	0	0	1	1	0	0	1
Bit No. 1	1	0	1	0	1	0	1	0	1	0

Interval (min.)	91	92	93	94	95	96	97	98	99
Bit No. 7	1	1	1	1	1	1	1	1	1
Bit No. 6	0	0	0	0	0	1	1	1	1
Bit No. 5	1	1	1	1	1	0	0	0	0
Bit No. 4	1	1	1	1	1	0	0	0	0
Bit No. 3	0	1	1	1	1	0	0	0	0
Bit No. 2	1	0	0	1	1	0	0	1	1
Bit No. 1	1	0	1	0	1	0	1	0	1

bizhub C20

15.3.26 SOFT SWITCH: #24 (Part 3)

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
7	Re-dial interval		0	
6			0	
5			0	
4			0	2
3			0	
2			1	
1			0	

Interval (min.)	Reserved									
Bit No. 7	1	1	1	1	1	1	1	1	1	1
Bit No. 6	1	1	1	1	1	1	1	1	1	1
Bit No. 5	0	0	0	0	0	0	0	0	0	0
Bit No. 4	0	0	0	0	1	1	1	1	1	1
Bit No. 3	1	1	1	1	0	0	0	0	1	1
Bit No. 2	0	0	1	1	0	0	1	1	0	0
Bit No. 1	0	1	0	1	0	1	0	1	0	1

Interval (min.)	Reserved									
Bit No. 7	1	1	1	1	1	1	1	1	1	1
Bit No. 6	1	1	1	1	1	1	1	1	1	1
Bit No. 5	0	0	1	1	1	1	1	1	1	1
Bit No. 4	1	1	0	0	0	0	0	0	0	0
Bit No. 3	1	1	0	0	0	0	1	1	1	1
Bit No. 2	1	1	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1	0	1

Interval (min.)	Reserved							
Bit No. 7	1	1	1	1	1	1	1	1
Bit No. 6	1	1	1	1	1	1	1	1
Bit No. 5	1	1	1	1	1	1	1	1
Bit No. 4	1	1	1	1	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1

15.3.27 SOFT SWITCH: #25

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4	Flash key time	(see table below)	0	0
3			0	
2	Reserved	Reserved	0	
1			0	

Flash time (ms)	**100**	80	60	50
Bit No. 4	**0**	0	1	1
Bit No. 3	**0**	1	0	1

Adjustment / Setting

15.3.28 SOFT SWITCH: #26

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Dial tone detection time before discon-nected	Time (unit=sec): 10 / 15 / 20 / 25 Bit No. 8: 0 / 0 / 1 / 1 Bit No. 7: 0 / 1 / 0 / 1	0	0
7			0	
6	Reserved	Reserved	0	
5			0	
4			0	0
3			0	
2			0	
1			0	

Time (unit=sec)	10	15	20	25
Bit No. 8	0	0	1	1
Bit No. 7	0	1	0	1

15.3.29 SOFT SWITCH: #27

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

15.3.30 SOFT SWITCH: #28

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Time to dial after dial tone on the line		1	A
7			0	
6			1	
5			0	
4	CED duration time within calling period		0	7
3			1	
2			1	
1			1	

Function (Bit 8-5: Time to dial after dial tone on the line):

Time (ms)	0	100	200	300	400	500	600	700
Bit No. 8	0	0	0	0	0	0	0	0
Bit No. 7	0	0	0	0	1	1	1	1
Bit No. 6	0	0	1	1	0	0	1	1
Bit No. 5	0	1	0	1	0	1	0	1

Time (ms)	800	900	**1000**	1100	1200	1300	1400	1500
Bit No. 8	1	1	**1**	1	1	1	1	1
Bit No. 7	0	0	**0**	0	1	1	1	1
Bit No. 6	0	0	**1**	1	0	0	1	1
Bit No. 5	0	1	**0**	1	0	1	0	1

Function (Bit 4-1: CED duration time within calling period):

Time (ms)	0	100	200	300	400	500	600	**700**
Bit No. 4	0	0	0	0	0	0	0	**0**
Bit No. 3	0	0	0	0	1	1	1	**1**
Bit No. 2	0	0	1	1	0	0	1	**1**
Bit No. 1	0	1	0	1	0	1	0	**1**

Time (ms)	800	900	1000	1100	1200	1300	1400	1500
Bit No. 4	1	1	1	1	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1

- Bit 1-4: The CED duration time level for automatic transmation

15.3.31 SOFT SWITCH: #29

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	1
7			0	
6			0	
5	Time to dial after seize the line when dial tone detection (Unit= 200 msec)	See tables below	1	
4			0	4
3			1	
2			0	
1			0	

Time (sec)	0	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8
Bit No. 5	0	0	0	0	0	0	0	0	0	0
Bit No. 4	0	0	0	0	0	0	0	0	1	1
Bit No. 3	0	0	0	0	1	1	1	1	0	0
Bit No. 2	0	0	1	1	0	0	1	1	0	0
Bit No. 1	0	1	0	1	0	1	0	1	0	1

Time (sec)	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8
Bit No. 5	0	0	0	0	0	0	1	1	1	1
Bit No. 4	1	1	1	1	1	1	0	0	0	0
Bit No. 3	0	0	1	1	1	1	0	0	0	0
Bit No. 2	1	1	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1	0	1

Time (sec)	**4.0**	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6	5.8
Bit No. 5	**1**	1	1	1	1	1	1	1	1	1
Bit No. 4	**0**	0	0	0	1	1	1	1	1	1
Bit No. 3	**1**	1	1	1	0	0	0	0	1	1
Bit No. 2	**0**	0	1	1	0	0	1	1	0	0
Bit No. 1	**0**	1	0	1	0	1	0	1	0	1

Time (sec)	6.0	6.2
Bit No. 5	1	1
Bit No. 4	1	1
Bit No. 3	1	1
Bit No. 2	1	1
Bit No. 1	0	1

15.3.32 SOFT SWITCH: #30

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Pause delay time within digits Ex. 002Pxxxxxx		0	6
7			1	
6	Signal tone insensitivity (dBm) after dial for busy tone		1	
5			0	
4			1	8
3			0	
2			0	
1			0	

Function (Bit No. 8–7):

Time (sec)	2.0	**2.5**	3.0	3.5
Bit No. 8	0	**0**	1	1
Bit No. 7	0	**1**	0	1

Function (Bit No. 6–1):

Level (dBm)	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Bit No. 6	0	0	0	0	0	0	0	0	0	0	0
Bit No. 5	0	0	0	0	0	0	0	0	0	0	0
Bit No. 4	0	0	0	0	0	0	0	0	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1	0	0	0
Bit No. 2	0	0	1	1	0	0	1	1	0	0	1
Bit No. 1	0	1	0	1	0	1	0	1	0	1	0

Level (dBm)	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20
Bit No. 6	0	0	0	0	0	0	0	0	0	0
Bit No. 5	0	0	0	0	0	1	1	1	1	1
Bit No. 4	1	1	1	1	1	0	0	0	0	0
Bit No. 3	0	1	1	1	1	0	0	0	0	1
Bit No. 2	1	0	0	1	1	0	0	1	1	0
Bit No. 1	1	0	1	0	1	0	1	0	1	0

Level (dBm)	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30
Bit No. 6	0	0	0	0	0	0	0	0	0	0
Bit No. 5	1	1	1	1	1	1	1	1	1	1
Bit No. 4	0	0	0	1	1	1	1	1	1	1
Bit No. 3	1	1	1	0	0	0	0	1	1	1
Bit No. 2	0	1	1	0	0	1	1	0	0	1
Bit No. 1	1	0	1	0	1	0	1	0	1	0

Level (dBm)	-31	-32	-33	-34	-35	-36	-37	-38	-39	**-40**
Bit No. 6	0	1	1	1	1	1	1	1	1	**1**
Bit No. 5	1	0	0	0	0	0	0	0	0	**0**
Bit No. 4	1	0	0	0	0	0	0	0	0	**1**
Bit No. 3	1	0	0	0	0	1	1	1	1	**0**
Bit No. 2	1	0	0	1	1	0	0	1	1	**0**
Bit No. 1	1	0	1	0	1	0	1	0	1	**0**

Level (dBm)	-41 to -50
Bit No. 6-1	Setting disable

15.3.33 SOFT SWITCH: #31

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">2</td></tr>
<tr><td>7</td><td rowspan="3">Min re-dial interval</td><td rowspan="3">
<table>
<tr><td>Interval</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td colspan="2">Reserved</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td></tr>
<tr><td>6</td><td>1</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">Max. re-dial attempts</td><td rowspan="4">
<table>
<tr><td>Attempts</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr>
</table>
<table>
<tr><td>Attempts</td><td colspan="5">Reserved</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>1</td><td rowspan="4">A</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>1</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

15.3.34 SOFT SWITCH: #32

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="8">Reserved</td><td rowspan="8">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

15.3.35 SOFT SWITCH: #33

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	4
7	V.17 Echo protection tone	0: off **1: On**	1	
6	V.29 Echo protection tone	**0: Off** 1: On	0	
5	Compromise equalize enable (CEQ) in the transmit path (TCEQ)	**0: No** 1: Yes	0	
4	Compromise equalize enable (CEQ) in the receiver path (RCEQ)	**0: No** 1: Yes	0	0
3	Reserved	Reserved	0	
2			0	
1			0	

- Bit 4-5: V.17, V.29 and V.27 only

15.3.36 SOFT SWITCH: #34

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

15.3.37 SOFT SWITCH: #35

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Dial tone table switch time</td><td rowspan="2"><table>
<tr><td>Time (sec)</td><td>1</td><td>2</td><td>3</td><td>4.5</td></tr>
<tr><td>Bit No. 8</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>1</td><td rowspan="4">A</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td rowspan="3">Dial tone frequency upper range index</td><td rowspan="3">See Bit No. 1 to 3</td><td>1</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td rowspan="3">Dial tone frequency low range index</td><td rowspan="3"><table>
<tr><td>Frequency range (Hz)</td><td>210 to 580</td><td>360 to 690</td><td colspan="3">210 to 580</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td colspan="3">0</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td colspan="3">1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td colspan="3">0</td></tr>
<tr><td>Frequency range (Hz)</td><td>360 to 690</td><td>210 to 580</td><td colspan="3">Reserved</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

15.3.38 SOFT SWITCH: #36

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Re-dial attempts continue fail counter (Using for detect line problem error)</td><td>0: No any limitation
1: limit up to bit 1 to 4</td><td>1</td><td rowspan="4">8</td></tr>
<tr><td>7</td><td rowspan="3">Reserved</td><td rowspan="3">Reserved</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">Re-dial attempts fail limitation counter (Using for detect line problem error)</td><td rowspan="4">(see counter tables below)</td><td>1</td><td rowspan="4">A</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>1</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

Counter	0	1	2	3	4	5	6	7
Bit No. 4	0	0	0	0	0	0	0	0
Bit No. 3	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1

Counter	8	9	**10**	11	12	13	14	15
Bit No. 4	1	1	**1**	1	1	1	1	1
Bit No. 3	0	0	**0**	0	1	1	1	1
Bit No. 2	0	0	**1**	1	0	0	1	1
Bit No. 1	0	1	**0**	1	0	1	0	1

- Bit 8: The re-dial fail counter will plus 1 for each auto dialing, unless user interruption or after finish communication. If the counter over the setting in bit 1 to 4 and Bit set to 1, then the machine will stop to dial unless user interruption or entry communication phase.

15.3.39 SOFT SWITCH: #37

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7	Auto dial learning for V.34 modem	**0: Yes - skip V.34 handshaking with remote side**	0	
		1: No - retry from V.8 handshake		
6	RX start symbol rate for V.34 modem	See Bit No. 1 to 3	0	
5			0	
4			0	0
3	TX start symbol rate for V.34 modem	(see table below)	0	
2			0	
1			0	

Symbol rate (sym/s)	**3429**	3200	3000	2800	2400
Max. speed (kbps)	**33.6**	31.2	28.8	26.4	21.6
Bit No. 3	**0**	0	0	0	1
Bit No. 2	**0**	0	1	1	0
Bit No. 1	**0**	1	0	1	0

Symbol rate	Reserved		
Max. speed			
Bit No. 3	1	1	1
Bit No. 2	0	1	1
Bit No. 1	1	0	1

15.3.40 SOFT SWITCH: #38

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	6
7	Set/Reset V.34 trans-mit level deviation	0: Reset	1	
		1: Set		
6	V.34 flag number between ECM frame	(see table below)	1	
5			0	
4	Phase 2 guard tone power level (V.34)	**0: normal power level**	0	1
		1: -7 db of normal power level		
3	Reserved	Reserved	0	
2			0	
1	V.8 /V.34 capability	0: No	1	
		1: Yes		

Flags number	1	2	**3**	15
Bit No. 6	0	0	**1**	1
Bit No. 5	0	1	**0**	1

15.3.41 SOFT SWITCH: #39

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Disable V.34 TX for V.34 modem</td><td>1: Yes
0: No</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>Disable V.34 RX for V.34 modem</td><td>1: Yes
0: No</td><td>0</td></tr>
<tr><td>6</td><td rowspan="2">Flags number in FSK frame for V.34 modem</td><td rowspan="2"><table><tr><td>Flags number</td><td>**1**</td><td>2</td><td>3</td><td>4</td></tr><tr><td>Bit No. 6</td><td>**0**</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 5</td><td>**0**</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>Manual TX mode for V.34 modem</td><td>**0: V.8 - start handshake from V.8**
1: V.17</td><td>0</td><td rowspan="4">1</td></tr>
<tr><td>3</td><td>Switch from V.17 to V.34 if DIS Bit 6 set after received DIS</td><td>**0: Yes - start V.8 handshaking. but only first time**
1: No - Continue start with.17</td><td>0</td></tr>
<tr><td>2</td><td rowspan="2">Delay time in primary channel for V.34 transmit after CFR or MCF signal</td><td rowspan="2"><table><tr><td>Delay time (ms)</td><td>100</td><td>**200**</td><td>300</td><td>500</td></tr><tr><td>Bit No. 2</td><td>0</td><td>**0**</td><td>1</td><td>1</td></tr><tr><td>Bit No. 1</td><td>0</td><td>**1**</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>1</td><td>1</td></tr>
</table>

15.3.42 SOFT SWITCH: #40

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="4">V.17 RX start speed select receiving start speed for V.17</td><td rowspan="4">
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.17</td><td>V.17</td><td>V.17</td><td>V.17</td></tr>
<tr><td>14400</td><td>12000</td><td>9600</td><td>7200</td></tr>
<tr><td>Bit No. 8</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.29</td><td>V.29</td><td>V.27</td><td>V.27 ter</td></tr>
<tr><td>9600</td><td>7200</td><td>4800</td><td>2400</td></tr>
<tr><td>Bit No. 8</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 7</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Speed</td><td colspan="8">Reserved</td></tr>
<tr><td>Bit No. 8</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td rowspan="3">V.34 RX start speed prohibit V.34 mode when upper speed less</td><td rowspan="3">
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.34</td><td>V.34</td><td>V.34</td><td>V.34</td></tr>
<tr><td>33600</td><td>31200</td><td>28800</td><td>26400</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.34</td><td>V.34</td><td>V.34</td><td>V.34</td></tr>
<tr><td>24000</td><td>21600</td><td>19200</td><td>16800</td></tr>
<tr><td>Bit No. 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

15.3.43 SOFT SWITCH: #41

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="4">V.17 TX start speed select receiving start speed for V.17</td><td rowspan="4">
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.17</td><td>V.17</td><td>V.17</td><td>V.17</td></tr>
<tr><td>14400</td><td>12000</td><td>9600</td><td>7200</td></tr>
<tr><td>Bit No. 8</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.29</td><td>V.29</td><td>V.27</td><td>V.27 ter</td></tr>
<tr><td>9600</td><td>7200</td><td>4800</td><td>2400</td></tr>
<tr><td>Bit No. 8</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 7</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Speed</td><td colspan="8">Reserved</td></tr>
<tr><td>Bit No. 8</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td rowspan="3">V.34 TX start speed prohibit V.34 mode when upper speed less</td><td rowspan="3">
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.34</td><td>V.34</td><td>V.34</td><td>V.34</td></tr>
<tr><td>33600</td><td>31200</td><td>28800</td><td>26400</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.34</td><td>V.34</td><td>V.34</td><td>V.34</td></tr>
<tr><td>24000</td><td>21600</td><td>19200</td><td>16800</td></tr>
<tr><td>Bit No. 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

15.3.44 SOFT SWITCH: #42

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	C-MODE Factory use only		0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

15.3.45 SOFT SWITCH: #43

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	C-MODE Factory use only		0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

15.3.46 SOFT SWITCH: #44

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

15.3.47 SOFT SWITCH: #45

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5	Call transfer	**0: Off** 1: On	0	
4	No. of call transfer	(see tables below)	0	3
3			0	
2			1	
1			1	

No. of call transfer (bits 4–1):

Value	0	1	2	**3**	4	5	6	7	8	9
Bit No. 4	0	0	0	**0**	0	0	0	0	1	1
Bit No. 3	0	0	0	**0**	1	1	1	1	0	0
Bit No. 2	0	0	1	**1**	0	0	1	1	0	0
Bit No. 1	0	1	0	**1**	0	1	0	1	0	1

Value	Reserved					
Bit No. 4	1	1	1	1	1	1
Bit No. 3	0	0	1	1	1	1
Bit No. 2	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1

15.3.48 SOFT SWITCH: #46

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Daylight savings timer	0: No **1: Yes**	1	8
7	Reserved	Reserved	0	
6			0	
5			0	
4	RX print mode	0: RX one page then print one page. (PRINT RX) **1: Start to print after receiving all pages. (MEMORY RX)**	1	A
3	Default TX mode	**0: Memory TX** 1: ADF TX	0	
2	Header for FAX TX	0: Off **1: On - transmit header at top of each page**	1	
1	Print model name on top of TX page If name not register	**0: No** 1: Yes	0	

- Bit 1: If machine name not registered, the model name will print at the top of each receiving page. The default is not to print. (base on custom ID)
- Bit 2: Some country such as U.S.A PTT regulation, must be send header at top of each page.

15.3.49 SOFT SWITCH: #47

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Reserved</td><td rowspan="2">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>RX mode</td><td>0: Auto RX mode
1: Manual RX mode</td><td>0</td></tr>
<tr><td>5</td><td>Footer</td><td>0: Off
1: On - Print footer information at each of received page</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">Reserved</td><td rowspan="4">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 5: The footer shows machine number, receiving time, remote side TSI number, session and page number. The details show on the report specification.

15.3.50 SOFT SWITCH: #48

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Activity report</td><td>0: No
1: Yes</td><td>1</td><td rowspan="4">A</td></tr>
<tr><td>7</td><td rowspan="2">TX result report</td><td rowspan="2"><table><tr><th>Description</th><th>ON</th><th>ON (Error)</th><th>OFF</th><th>Reserved</th></tr><tr><td>Bit No. 7</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 6</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>6</td><td>1</td></tr>
<tr><td>5</td><td rowspan="2">RX result report</td><td rowspan="2"><table><tr><th>Description</th><th>ON</th><th>ON (Error)</th><th>OFF</th><th>Reserved</th></tr><tr><td>Bit No. 5</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 4</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>4</td><td>1</td><td rowspan="4">8</td></tr>
<tr><td>3</td><td rowspan="3">Reserved</td><td rowspan="3">Reserved</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

15.3.51 SOFT SWITCH: #49

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5	Re-dial method if Comm. Fail	**0: Re-dial again** 1: Base on re-dial time interval	0	
4	No. of rings	(see tables below)	0	1
3			0	
2			0	
1			1	

No. of rings	1	**2**	3	4	5	6	7	8
Bit No. 4	0	**0**	0	0	0	0	0	0
Bit No. 3	0	**0**	0	0	1	1	1	1
Bit No. 2	0	**0**	1	1	0	0	1	1
Bit No. 1	0	**1**	0	1	0	1	0	1

No. of rings	9	10	11	12	13	14	15	16
Bit No. 4	1	1	1	1	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1

15.3.52 SOFT SWITCH: #50

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Transmit or cancel after time out in "Memory TX"	**0: Cancel and print out report** 1: Transmission	0	0
7	Reserved	Reserved	0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

- Bit 8: Can select cancel this job and print out report or start to send in case of time when memory full condition occurs.

15.3.53 SOFT SWITCH: #51

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="4">Reserved</td><td rowspan="4">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="2">T30 monitor report selection</td><td rowspan="2"><table><tr><td>Description</td><td>Not to print</td><td>Print report for each transaction</td><td>Print report while reporting error</td><td>Not used</td></tr><tr><td>Bit No. 4</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 3</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>Send unsent page mode for memory transmission</td><td>0: From error page
1: From start page</td><td>0</td></tr>
<tr><td>1</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
</table>

15.3.54 SOFT SWITCH: #52

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="8">Reserved</td><td rowspan="8">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

15.3.55 SOFT SWITCH: #53

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

15.3.56 SOFT SWITCH: #54

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Report Date/Time type	0: Digits format **1: Alpha numeric format**	1	A
7	Report Date/Time format	When bit No.8 is "1". Date/Time: 2008. MAR. 25 / **MAR. 25. 2008** / 25. MAR. 2008 Bit No. 7: 0 / **0** / 1 Bit No. 6: 0 / **1** / 0 When bit No.8 is "0". Date/Time: 2008. 11. 25 / 25. 11. 2008 / **11. 25. 2008** Bit No. 7: 0 / 0 / **1** Bit No. 6: 0 / 1 / **0**	0	
6			1	
5	Memory near full capacity for Fax and I-Fax scanning	Description (KB): 256 / **512** / 1024 / 1536 Bit No. 5: 0 / **0** / 1 / 1 Bit No. 4: 0 / **1** / 0 / 1	0	
4			1	8
3	Memory near full capacity for N-scan scanning	Description (KB): **512** / 1024 / 2512 / 5024 Bit No. 3: **0** / 0 / 1 / 1 Bit No. 2: **0** / 1 / 0 / 1	0	
2			0	
1	Reserved	Reserved	0	

When bit No.8 is "1".

Date/Time	2008. MAR. 25	**MAR. 25. 2008**	25. MAR. 2008
Bit No. 7	0	**0**	1
Bit No. 6	0	**1**	0

When bit No.8 is "0".

Date/Time	2008. 11. 25	25. 11. 2008	**11. 25. 2008**
Bit No. 7	0	0	**1**
Bit No. 6	0	1	**0**

Description (KB)	256	**512**	1024	1536
Bit No. 5	0	**0**	1	1
Bit No. 4	0	**1**	0	1

Description (KB)	**512**	1024	2512	5024
Bit No. 3	**0**	0	1	1
Bit No. 2	**0**	1	0	1

15.3.57 SOFT SWITCH: #55

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

15.3.58 SOFT SWITCH: #56

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

15.3.59 SOFT SWITCH: #57

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

15.3.60 SOFT SWITCH: #58

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Time out from PSK to FSK delay time	**0: 6 sec.** 1: 30 sec.	0	0
7	Reserved	Reserved	0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

- Bit 8: This is the delay time for PSK signal after sending MCF or PPR command. The timer depends on each country regulation.

15.3.61 SOFT SWITCH: #59 (Part 1)

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Reserved</td><td rowspan="2">Reserved</td><td>0</td><td rowspan="4">2</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td rowspan="6">Time Between GMT (Greenwich Mean Time)</td><td rowspan="6">
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>+00:00</th><th>+00:30</th><th>+01:00</th><th>+01:30</th></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>+02:00</th><th>+02:30</th><th>+03:00</th><th>+03:30</th></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>+04:00</th><th>+04:30</th><th>+05:00</th><th>+05:30</th></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>+06:00</th><th>+06:30</th><th>+07:00</th><th>+07:30</th></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><th rowspan="2">Time between mean time</th><th colspan="4">Greenwich mean time + T</th></tr>
<tr><th>+08:00</th><th>+08:30</th><th>+09:00</th><th>+09:30</th></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 5</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>1</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>1</td><td rowspan="4">A</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>1</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

15.3.62 SOFT SWITCH: #59 (Part 2)

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
6	Time Between GMT (Greenwich Mean Time)	(see tables below)	1	
5			0	
4			1	A
3			0	
2			1	
1			0	

Time between mean time	Greenwich mean time + T			
	+10:00	+10:30	+11:00	+11:30
Bit No. 6	0	0	0	0
Bit No. 5	1	1	1	1
Bit No. 4	0	0	0	0
Bit No. 3	1	1	1	1
Bit No. 2	0	0	1	1
Bit No. 1	0	1	0	1

Time between mean time	Greenwich mean time + T			
	+12:00	-00:30	-01:00	-01:30
Bit No. 6	0	1	1	1
Bit No. 5	1	0	0	0
Bit No. 4	1	0	0	0
Bit No. 3	0	0	0	0
Bit No. 2	0	0	1	1
Bit No. 1	0	1	0	1

Time between mean time	Greenwich mean time + T			
	-02:00	-02:30	-03:00	-03:30
Bit No. 6	1	1	1	1
Bit No. 5	0	0	0	0
Bit No. 4	0	0	0	0
Bit No. 3	1	1	1	1
Bit No. 2	0	0	1	1
Bit No. 1	0	1	0	1

Time between mean time	Greenwich mean time + T			
	-04:00	-04:30	**-05:00**	-05:30
Bit No. 6	1	1	**1**	1
Bit No. 5	0	0	**0**	0
Bit No. 4	1	1	**1**	1
Bit No. 3	0	0	**0**	0
Bit No. 2	0	0	**1**	1
Bit No. 1	0	1	**0**	1

Time between mean time	Greenwich mean time + T			
	-06:00	-06:30	-07:00	-07:30
Bit No. 6	1	1	1	1
Bit No. 5	0	0	0	0
Bit No. 4	1	1	1	1
Bit No. 3	1	1	1	1
Bit No. 2	0	0	1	1
Bit No. 1	0	1	0	1

15.3.63 SOFT SWITCH: #59 (Part 3)

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>6</td><td rowspan="6">Time Between GMT (Greenwich Mean Time)</td><td rowspan="2">
<table>
<tr><td rowspan="2">Time between mean time</td><td colspan="4">Greenwich mean time + T</td></tr>
<tr><td>-08:00</td><td>-08:30</td><td>-09:00</td><td>-09:30</td></tr>
<tr><td>Bit No. 6</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>1</td><td rowspan="2"></td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="2">
<table>
<tr><td rowspan="2">Time between mean time</td><td colspan="4">Greenwich mean time + T</td></tr>
<tr><td>-10:00</td><td>-10:30</td><td>-11:00</td><td>-11:30</td></tr>
<tr><td>Bit No. 6</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>1</td><td rowspan="4">A</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td rowspan="2">
<table>
<tr><td rowspan="2">Time between mean time</td><td colspan="8">Greenwich mean time + T</td></tr>
<tr><td>-12:00</td><td colspan="7">Reserved</td></tr>
<tr><td>Bit No. 6</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>1</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit1-6: This value must be entered correctly, or E-mail headers will be wrong. A good reference web site may be found at http://greenwichmeantime.com
  Available ranges are:12 to -12, in half hour increments. The default setting was depend on each PTT.

15.3.64 SOFT SWITCH: #60

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6	Quick memory TX	**0: Ineffective** 1: Effective	0	
5	Reserved	Reserved	0	
4			0	0
3			0	
2	Off hook alarm after communication	**0: Alarm** 1: Not alarm after communication	0	
1	Display destination selection within TX phase C	**0: Local Name or telephone number** 1: Remote telephone number	0	

15.3.65 SOFT SWITCH: #61

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4	Max. No. of ring		1	F
3			1	
2			1	
1			1	

No. of rings	1	2	3	4	5	6	7	8
Bit No. 4	0	0	0	0	0	0	0	0
Bit No. 3	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1

No. of rings	9	10	11	12	13	14	15	**16**
Bit No. 4	1	1	1	1	1	1	1	**1**
Bit No. 3	0	0	0	0	1	1	1	**1**
Bit No. 2	0	0	1	1	0	0	1	**1**
Bit No. 1	0	1	0	1	0	1	0	**1**

15.3.66 SOFT SWITCH: #62

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

15.3.67 SOFT SWITCH: #63

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	"#" key definition in PBX mode	**1: "#" is external key, machine (PBX) default is internal**	1	8
		0: "#" is internal key, machine (PSTN) default is external		
7	Reserved	Reserved	0	
6			0	
5			0	
4			0	0
3			0	
2	Fax TX image adjust	**0: Normal**	0	
		1: Special handle		
1	TX result report with image	**0: Yes**	0	
		1: No		

- Bit 8: If this bit set to 1, the # key is use to access PSTN line after dial the pre-fix number
  If this bit set to 0, the # key is use to access PBX line instead of PSTN line.
- Bit 1: This bit set to "1", the first page image will not append at the bottom of error report or OK report.
- Bit2: When this bit sets to "1", "Thin line" image with TEXT mode becomes more clear.

15.3.68 SOFT SWITCH: #64

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6	Print RX error report in RX side if no any FAX signal detected	**0: No** 1: Yes	0	
5	10 PPS & 20 PPS selectable by user	**0: No** 1: Yes	0	
4	Reserved	Reserved	0	0
3			0	
2			0	
1			0	

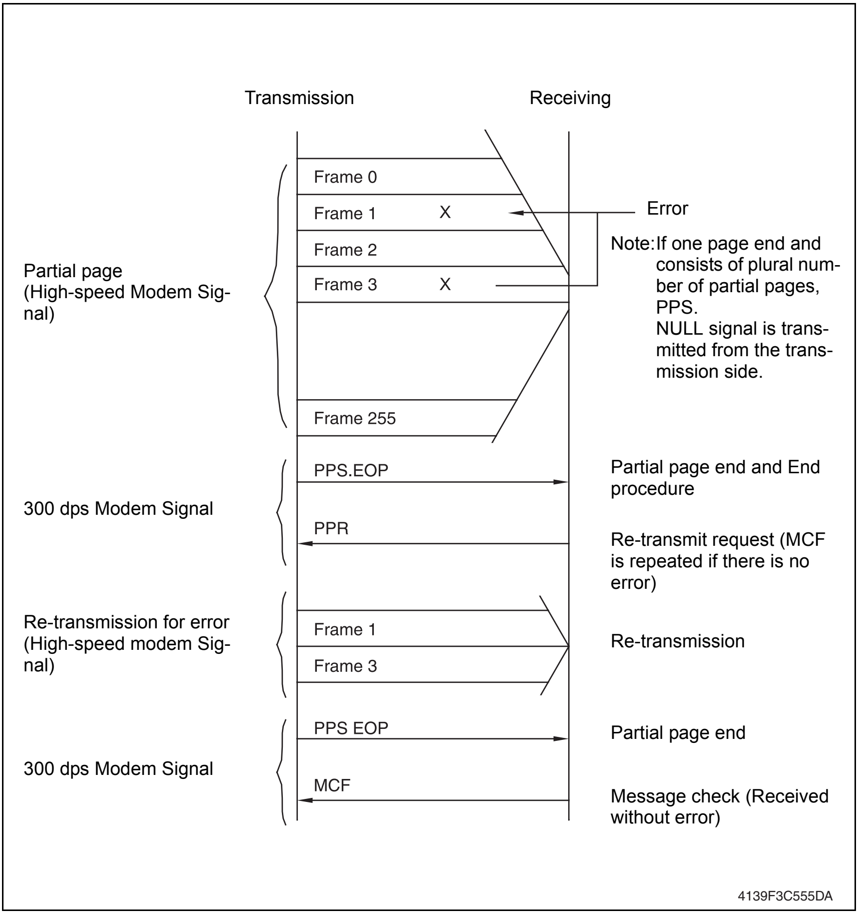
- Bit 6: If this bit set to 1, Machine do not print put RX error report if no detect any Fax signal from the other party.
- Bit 5: Can not open by user to change PPS if this bit set to “0”.

16. Fax Protocols

16.1 G3 ECM (G3 Error Correction Mode)

- G3 ECM is the error correction system newly recommended by consultative committee of International telephone & telegraph of 1988.
- By G3 ECM, documents are divided into blocks (called partial page) for transmission. If any error takes place in any frame (one partial page consists of 256 frames) on a partial page, the receiving party generates the retransmit request with erroneous frame numbers.

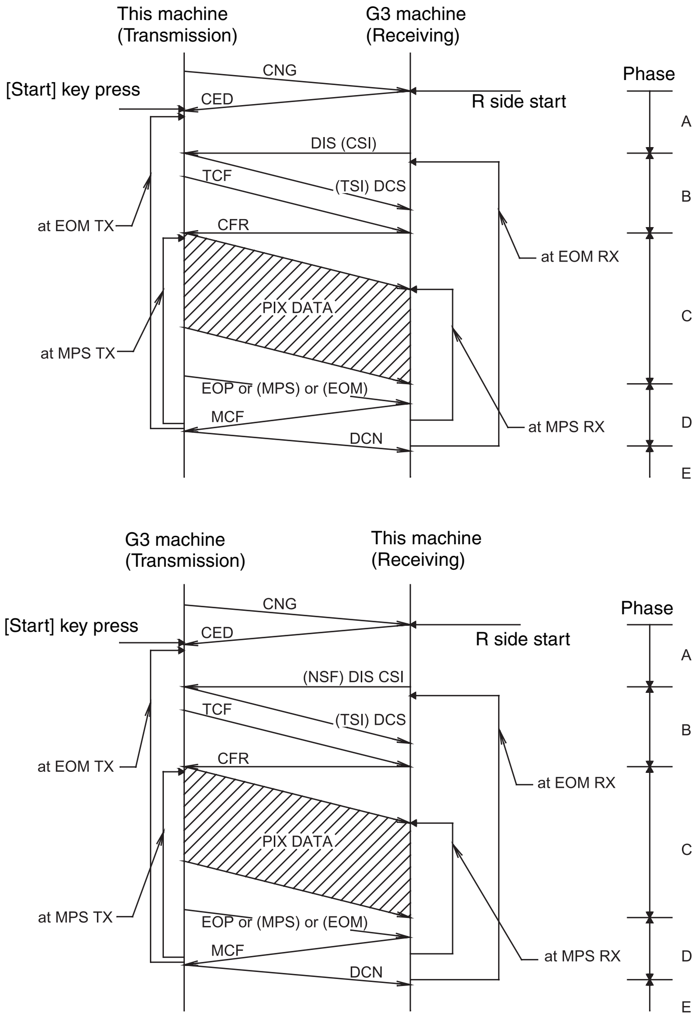
Here is an example where frame 1 and frame 3 are subjected to error:



16.2 Line control

16.2.1 Procedure of G3 mode communication

- Basic communications diagram of G3 mode.



Drawing: Line Control

4139F3C556DA

16.3 Table of reference code

Code	Function
CFR	Confirmation to Receive. 1850 Hz or 1650 Hz 3 sec.
CIG	Calling Station Identification.
CRP	Command Repeat.
CSI	Called Subscriber Identification.
DCN	Disconnect.
DCS	Digital Identification Signal.
DIS	Digital Transmit Command.
DTC	Digital Transmit Command.
EOM	End of Message. 1,100 Hz.
EOP	End of Procedure.
FTT	Failure to Train.
MCF	Message Confirmation. 1,650 Hz or 1,850 Hz.
MPS	Multi-Page Signal.
NCS	Non-Standard Facilities Command.
NCF	Non-Standard Facilities.
NSS	Non-Standard Facilities Set-up.
PIN	Procedural Interrupt Negative.
PIP	Procedural Interrupt Positive.
PRI-EOM	Procedure Interrupt-End of Message (COM).
PRI-MPS	Procedure Interrupt-Multi page Signal (MPS).
PRI-EOP	Procedure Interrupt-End of Procedure (EOP).
RTN	Retrain Negative.
RTP	Retrain Positive.
TSI	Transmitting Station Identification.

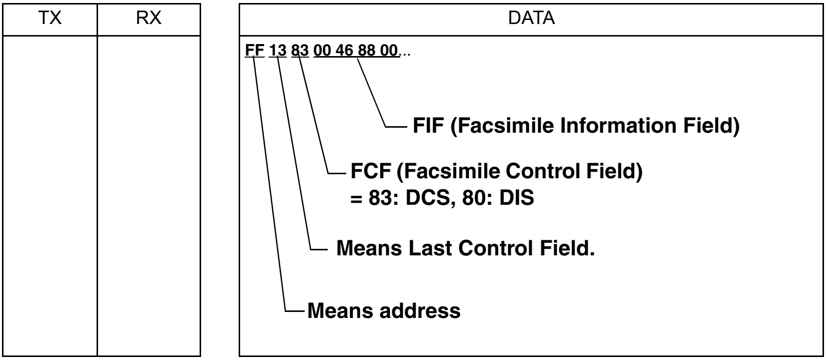
16.4 How to analyze the T30 protocol monitor

- DCS or DIS
- HEX Data as printed on page.
  See P.225
- Example: V.17 Communication

PROTOCOL MONITOR REPORT

NAME: ABC
TEL:886 3 4733507
DATE: APR.23'04 12:20

SESSION	FUNCTION	NO	DESTINATION STATION	DATE	TIME	PAGE	DURATION	MODE	RESULT
0001	TX	01	ABC 22345678901234567890	DEC.02	15:00	008	00h00min00s	ECM-12	OK



- FIF (Facsimile Information Field)

HEX	1																2															
	0				0				4				6				8				8				0				0			
Data Bit	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Bit No.	8	7	6	5	4	3	2	1	16	15	14	13	12	11	10	9	24	23	22	21	20	19	18	19	32	31	30	29	28	27	26	25
										↑			↑	↑							↑	↑										
Note	Bit No.11= 1, Bit No.12=0 7200 bps Bit No.15= 1 R8 x 7.7 Lines/mm (Fine Mode) Bit No.19= 0, Bit No.20=1 Unlimited Paper Length																															

- Hex-Binary Conversion List

Hex	Binary				Hex	Binary				Hex	Binary				Hex	Binary			
0	0	0	0	0	4	0	1	0	0	8	1	0	0	0	C	1	1	0	0
1	0	0	0	1	5	0	1	0	1	9	1	0	0	1	D	1	1	0	1
2	0	0	1	0	6	0	1	1	0	A	1	0	1	0	E	1	1	1	0
3	0	0	1	1	7	0	1	1	1	B	1	0	1	1	F	1	1	1	1

DIS (DTC) / DCS Bit Allocation Table of FIF (Facsimile Information Field)

<table>
<tr><th>Bit No.</th><th>Designation</th><th>DIS/DTC</th><th>DCS</th></tr>
<tr><td>1</td><td colspan="3">“0”= Invalid
“1”= Store-and-forward switching Internet fax simple mode</td></tr>
<tr><td>2</td><td colspan="3">Set to “0”</td></tr>
<tr><td>3</td><td colspan="3">“0”= Invalid
“1”= Real-time Internet fax</td></tr>
<tr><td>4</td><td colspan="3">Set to “0”</td></tr>
<tr><td>5</td><td colspan="3">Set to “0”</td></tr>
<tr><td>6</td><td colspan="2">“0”= Invalid
“1”= V.8 capabilities</td><td>Invalid</td></tr>
<tr><td>7</td><td>Flame size</td><td>“0” = 256 octets preferred
“1”= 64 octets preferred</td><td>Invalid</td></tr>
<tr><td>8</td><td colspan="3">Set to “0”</td></tr>
<tr><td>9</td><td colspan="2">“0”= Invalid
“1”= Ready to transmit a facsimile document (polling)</td><td>Set to “0”</td></tr>
<tr><td>10</td><td colspan="3">“0”= Invalid
“1”= Receiver fax operation</td></tr>
<tr><td>11
12
13
14</td><td>Data signalling rate</td><td>
<table>
<tr><th colspan="4">Bit No.</th><th rowspan="2">Data signalling rate</th></tr>
<tr><th>14</th><th>13</th><th>12</th><th>11</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>V.27 ter fall-back mode</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>Rec. V.29</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>Rec. V.27 ter</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>Rec. V.27 ter and V.29</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>0</td><td>Not used</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>1</td><td>Not used</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>0</td><td>Reserved</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>1</td><td>Reserved</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>0</td><td>Not used</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>1</td><td>Not used</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>0</td><td>Reserved</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>1</td><td>Rec. V.27 ter, V.29, V33 and V.17</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>0</td><td>Not used</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>1</td><td>Not used</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>0</td><td>Reserved</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>1</td><td>Reserved</td></tr>
</table>
</td><td>
<table>
<tr><th colspan="4">Bit No.</th><th rowspan="2">Data signalling rate</th></tr>
<tr><th>14</th><th>13</th><th>12</th><th>11</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>2400 bit/s, rec. V.27ter</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>9600 bit/s, rec. V.29</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>4800 bit/s, rec. V.27ter</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>7200 bit/s, rec. V.29</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>0</td><td>Invalid</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>1</td><td>Reserved</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>0</td><td>Invalid</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>1</td><td>Reserved</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>0</td><td>14,400 bit/s, rec. V.17</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>1</td><td>9,600 bit/s, rec. V.17</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>0</td><td>12,000 bit/s, rec. V.17</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>1</td><td>7,200 bit/s, rec. V.17</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>0</td><td>Reserved</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>1</td><td>Reserved</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>0</td><td>Reserved</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>1</td><td>Reserved</td></tr>
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</td></tr>
<tr><td>15</td><td colspan="3">“0”= Invalid
“1”= R8 × 7.7 lines/mm and/or 200 × 200 pels/25.4 mm</td></tr>
<tr><td>16</td><td colspan="2">“0”= Invalid
“1”= Two-dimensional coding capability</td><td>“0”= Invalid
“1”= Two-dimensional coding</td></tr>
</table>

<table>
<tr><th>Bit No.</th><th>Designation</th><th>DIS/DTC</th><th>DCS</th></tr>
<tr><td>17
18</td><td>Recording width capabilities</td>
<td><table>
<tr><th colspan="2">Bit No.</th><th rowspan="2">Data signalling rate</th></tr>
<tr><th>18</th><th>17</th></tr>
<tr><td>0</td><td>0</td><td>Scan line length 215 mm ± 1%</td></tr>
<tr><td>0</td><td>1</td><td>Scan line length 215 mm ± 1%
and scan line length 255 mm ± 1%</td></tr>
<tr><td>1</td><td>0</td><td>Scan line length 215 mm ± 1%
and scan line length 255 mm ± 1%
and scan line length 303 mm ± 1%</td></tr>
<tr><td>1</td><td>1</td><td>Invalid</td></tr>
</table></td>
<td><table>
<tr><th colspan="2">Bit No.</th><th rowspan="2">Data signalling rate</th></tr>
<tr><th>18</th><th>17</th></tr>
<tr><td>0</td><td>0</td><td>Scan line length 215 mm ± 1%</td></tr>
<tr><td>0</td><td>1</td><td>Scan line length 255 mm ± 1%</td></tr>
<tr><td>1</td><td>0</td><td>Scan line length 303 mm ± 1%</td></tr>
<tr><td>1</td><td>1</td><td>Invalid</td></tr>
</table></td></tr>
<tr><td>19
20</td><td>Recording length capability</td>
<td><table>
<tr><th colspan="2">Bit No.</th><th rowspan="2">Recording length capability</th></tr>
<tr><th>20</th><th>19</th></tr>
<tr><td>0</td><td>0</td><td>A4 (297 mm)</td></tr>
<tr><td>0</td><td>1</td><td>A4 (297 mm) and B4 (364 mm)</td></tr>
<tr><td>1</td><td>0</td><td>Unlimited</td></tr>
<tr><td>1</td><td>1</td><td>Invalid</td></tr>
</table></td>
<td><table>
<tr><th colspan="2">Bit No.</th><th rowspan="2">Recording length capability</th></tr>
<tr><th>20</th><th>19</th></tr>
<tr><td>0</td><td>0</td><td>A4 (297 mm)</td></tr>
<tr><td>0</td><td>1</td><td>B4 (364 mm)</td></tr>
<tr><td>1</td><td>0</td><td>Unlimited</td></tr>
<tr><td>1</td><td>1</td><td>Invalid</td></tr>
</table></td></tr>
<tr><td>21
22
23</td><td colspan="2"><table>
<tr><th colspan="3">Bit No.</th><th rowspan="2">Minimum scan line time capability at the receive</th></tr>
<tr><th>23</th><th>22</th><th>21</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>20 ms at 3.85 1/mm: T 7.7 = T 3.85 20 ms</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>5 ms at 3.85 1/mm: T 7.7 = T 3.85</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>10 ms at 3.85 1/mm: T 7.7 = T 3.85 10 ms</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>20 ms at 3.85 1/mm: T 7.7 = 1/2 T 3.85</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>40 ms at 3.85 1/mm: T 7.7 = T 3.85 40 ms</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>40 ms at 3.85 1/mm: T 7.7 = 1/2 T 3.85</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>10 ms at 3.85 1/mm: T 7.7 = 1/2 T 3.85</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>0 ms at 3.85 1/mm: T 7.7 = T 3.85</td></tr>
</table></td>
<td><table>
<tr><th colspan="3">Bit No.</th><th rowspan="2">Minimum scan line time</th></tr>
<tr><th>23</th><th>22</th><th>21</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>20 ms</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>5 ms</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>10 ms</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>40 ms</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>0 ms</td></tr>
</table></td></tr>
<tr><td>24</td><td>Extension field</td><td colspan="2">“0”= Without
“1”= With</td></tr>
<tr><td>25</td><td colspan="3">Reserved</td></tr>
<tr><td>26</td><td colspan="3">“0”= Invalid
“1”= Un-compressed mode</td></tr>
<tr><td>27</td><td colspan="3">“0”= Invalid
“1”= ECM</td></tr>
<tr><td>28</td><td colspan="2">Set to “0”</td><td>Frame size 0: 256 octets
Frame size 1: 64 octets</td></tr>
<tr><td>29</td><td colspan="3">Set to “0”</td></tr>
<tr><td>30</td><td colspan="3">Set to “0”</td></tr>
</table>

Bit No.	Designation	DIS/DTC	DCS
31	"0"= Invalid "1"= T.6 coding capability		"0"= Invalid "1"= T.6 coding enabled
32	Extend field	"0"= Without "1"= With	
33	"0"= Invalid "1"= Field not valid capability		
34	"0"= Invalid "1"= Multiple selective polling capability		Set to "0"
35	"0"= Invalid "1"= Polling sub address transmission (DTC) by Polled Sub Address (DIS)/PSA		Set to "0"
36	"0"= Invalid "1"= T.43 coding		
37	"0"= Invalid "1"= Plane interleave		
38	Set to "0"		
39	Set to "0"		
40	Extend field	"0"= Without "1"= With	
41	"0"= Invalid "1"= R8 x 15.4 lines/mm		
42	"0"= Invalid "1"= 300 x 300 pels/25.4 mm		
43	"0"= Invalid "1"= R16 x 15.4 lines/mm and/or 400 x 400 pels/25.4 mm		
44	"0"= Invalid "1"= Inch based resolution preferred		Resolution type selection "0"= metric based resolution "1"= inch based resolution
45	"0"= Invalid "1"= Metric based resolution preferred		Do not care
46	Minimum scan line time capability for higher resolutions.	"0": T 15.4 = T 7.7 "1": T 15.4 = 1/2 T 7.7	Do not care
47	"0"= Invalid "1"= Selective polling (DIS)/ Selective polling transmission (DTC)		Set to "0"
48	Extend field	0: Without 1: With	
49	"0"= Invalid "1"= Sub Addressing capability		"0"= Invalid "1"= Sub Addressing transmission
50	"0"= Invalid "1"= Password/ Sender Identification capability (DIS)/ Password transmission (DTC)		"0"= Invalid "1"= Sender Identification transmis-sion
51	"0"= Invalid "1"= Ready to transmit a data file (polling)		Set to "0"
52	Set to "0"		
53	"0"= Invalid "1"= Binary File Transfer (BFT)		

Bit No.	Designation	DIS/DTC	DCS
54	"0"= Invalid "1"= Document Transfer Mode (DTM)		
55	"0"= Invalid "1"= EDIFACT Transfer (EDI)		
56	Extend field	0: Without 1: With	
57	"0"= Invalid "1"= Basic Transfer Mode (BTM)		
58	Set to "0"		
59	"0"= Invalid "1"= Ready to transmit a character or mixed mode document (polling)		Set to "0"
60	"0"= Invalid "1"= Character mode		
61	Set to "0"		
62	"0"= Invalid "1"= Mixed mode		
63	Set to "0"		
64	Extend field	"0"= Without "1"= With	
65	"0"= Invalid "1"= Processable mode 26		
66	"0"= Invalid "1"= Digital network capability		
67	Duplex and half duplex capabilities	"0"= Half duplex operation only "1"= Duplex and half duplex operation	"0"= Half duplex operation only "1"= Duplex operation
68	"0"= Invalid "1"= JPEG coding		
69	"0"= Invalid "1"= Full color mode		
70	Set to "0"		"0"= Invalid "1"= Preferred Huffmann tables
71	"0"= Invalid "1"= 12 bit/pixel/element		
72	Extend field	"0"= Without "1"= With	
73	"0"= Invalid "1"= No sampling (1:1:1)		
74	"0"= Invalid "1"= Nonstandard radiation light		
75	"0"= Invalid "1"= Nonstandard is mute range		
76	"0"= Invalid "1"= North American Letter (215.9 mm × 279.4 mm) capacity		"0"= Invalid "1"= North American Letter (215.9 mm × 279.4 mm)

Bit No.	Designation	DIS/DTC	DCS
77	"0"= Invalid "1"= North American Legal (215.9 mm × 355.6 mm) capacity		"0"= Invalid "1"= North American Legal (215.9 mm × 355.6 mm)
78	"0"= Invalid "1"= Single layer sequential encoding, basic capacity		"0"= Invalid "1"= Single layer sequential encoding, basic
79	"0"= Invalid "1"= Single layer sequential encoding, optional L0 capacity		
80	Extend field	"0"= Without "1"= With	
81	"0"= Invalid "1"= HKM key management capacity		"0"= Invalid "1"= HKM key management selection
82	"0"= Invalid "1"= RSA key management capacity		"0"= Invalid "1"= RSA key management selection
83	"0"= Invalid "1"= Override mode capacity		"0"= Invalid "1"= Override mode function
84	"0"= Invalid "1"= HFX40 code capacity		"0"= Invalid "1"= HFX40 code selection
85	"0"= Invalid "1"= Alternative code number 2 capacity		"0"= Invalid "1"= Alternative code number 2 selection
86	"0"= Invalid "1"= Alternative code number 3 capacity		"0"= Invalid "1"= Alternative code number 3 selection
87	"0"= Invalid "1"= HFX40-1 hashing capacity		"0"= Invalid "1"= HFX40-1 hashing selection
88	Extend field	"0"= Without "1"= With	
89	"0"= Invalid "1"= Alternative hashing system number 2 capacity		"0"= Invalid "1"= Alternative hashing system number 2 selection
90	"0"= Invalid "1"= Alternative hashing system number 3 capacity		"0"= Invalid "1"= Alternative hashing system number 3 selection
91	Reserved		
92	"0"= Invalid "1"= T.44 (Mixed raster content) mode		
93	"0"= Invalid "1"= T.44 (Mixed raster content) mode		
94	"0"= Invalid "1"= T.44 (Mixed raster content) mode		
95	"0"= Invalid "1"= Page length maximum strip size for T.44 (Mixed raster content)		
96	Extend field	"0"= Without "1"= With	

Bit No.	Designation	DIS/DTC	DCS
97	"0"= Invalid "1"= Color/mono-color multi-value 300 pixels x 300 pixels or 400 pixels x 400 pixels / 25.4 mm		
98	"0"= Invalid "1"= R4 x 3.85 lines/mm and/or 100 pixels x 100 pixels / 25.4 mm for color/mono-color multi-value		
99	"0"= Invalid "1"= Single phase C BFT negotiation capacity		
100	Set to "0"		
101	Set to "0"		
102	Set to "0"		
103	Set to "0"		
104	Extend field	"0"= Without "1"= With	

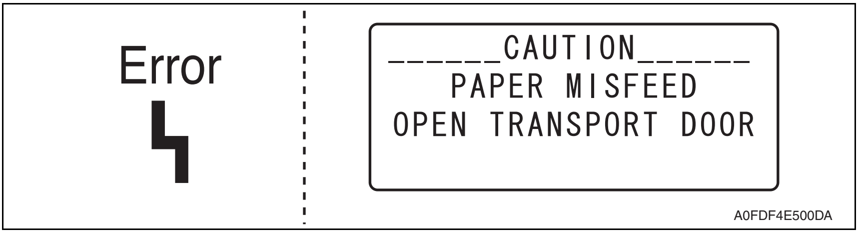
Blank Page

Troubleshooting

17. Jam display

17.1 Misfeed display

- When a paper misfeed occurs, the printer shows the corresponding paper misfeed status by means of the Error indicator on the control panel or LCD display.



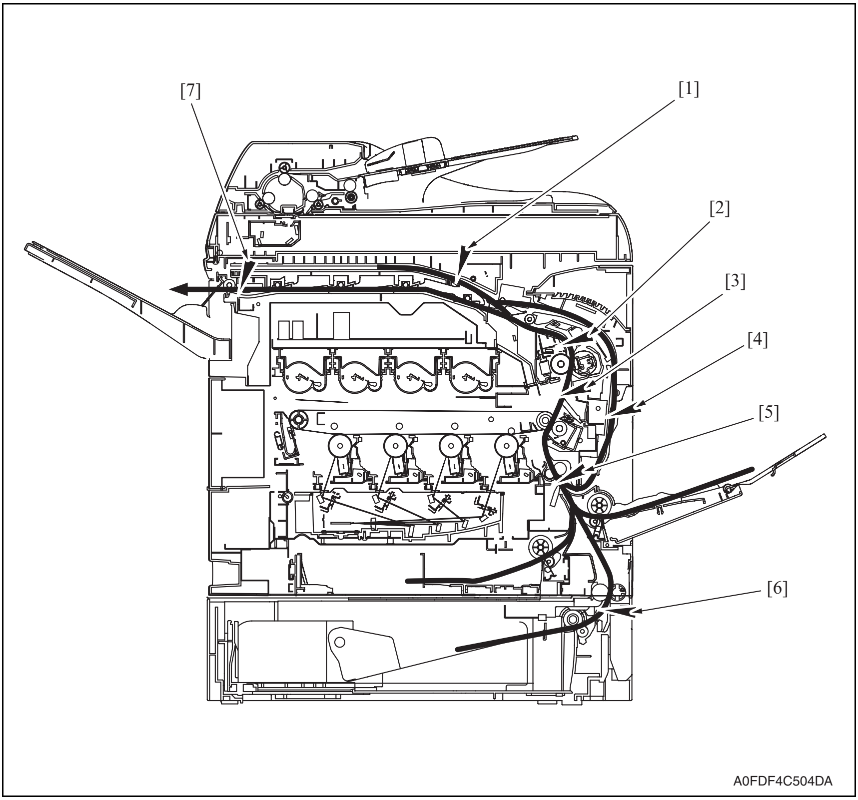
Display	Misfeed Location	Misfeed processing location	Action
PAPER MISFEED OPEN RIGHT DOOR	Tray2 paper feed section	Tray2 right side cover	P.323
PAPER MISFEED OPEN TRANSPORT DOOR	Tray3 paper feed section	Tray3 right side cover	Lower Feeder Unit Service Manual P.18
FUSER JAM OPEN RIGHT DOOR	Fusing section	Right door Fuser unit	P.324
TRANSFER ROLLER JAM OPEN TRANSPORT DOOR	Transfer section	Right door	P.325
VERTICAL TRANS JAM OPEN RIGHT DOOR	Tray3 vertical transport section	Right door	Lower Feeder Unit Service Manual P.19
DUPLEX LOWER JAM OPEN RIGHT DOOR	Duplex paper feed section	Right door	P.326
DUPLEX UPPER JAM OPEN RIGHT DOOR	Duplex paper conveyance section	Right door	P.327
MP TRAY JAM OPEN RIGHT DOOR	Tray1 paper feed section	Manual feed tray Right door	P.328
HORIZONTAL TRANS JAM OPEN FRONT COVER UP SCANNER UNIT	Horizontal transport section	Front cover IR unit	P.328
OUTPUT JAM OPEN FRONT COVER UP SCANNER UNIT	Exit section	Front cover IR unit	P.329
SWITCH BACK JAM OPEN FRONT COVER UP SCANNER UNIT	Switch back section	Front cover IR unit	P.329
ORIGINAL DOC. JAM OPEN DOC. FEED COVER	Document feeding section Document transport section Document exit section	Top cover	Auto Document Feeder Unit Service Manual P.28

17.1.1 Misfeed display resetting procedure

- Open the relevant cover, clear the sheet of misfeed paper, and close the cover.

17.2 Sensor layout

- System equipped with a lower feeder unit



[1]	Switchback sensor (PS30)	[5]	Registration sensor (PS4)
[2]	Exit sensor/1 (PS8)	[6]	Media feed sensor (PS3)
[3]	Media loop sensor (PS6)	[7]	Exit sensor/2 (PS31)
[4]	Duplex transport sensor (PS26)		

17.3 Solution

17.3.1 Initial check items

- When a paper misfeed occurs, first make checks of the following initial check items.

Check item	Action
Does paper meet product specifications?	• Change paper.
Is paper curled, wavy, or damp.	• Change paper. • Instruct user in correct paper storage.
Is a foreign matter present along the paper path, or is the paper path deformed or worn?	• Clean or change the paper path.
Are rolls/rollers dirty, deformed, or worn?	• Clean or change the defective roll/roller.
Are the edge guide and trailing edge stop at correct position to accommodate the paper?	• Set as necessary.
Are actuators found operational as checked for correct operation?	• Correct or change the defective actuator.

17.3.2 Misfeed at tray 2 paper feed section

A. Detection timing

Type	Description
Detection of misfeed at tray 2 paper feed section	The paper does not unblock the registration sensor (PS4) even after the lapse of a given period of time after the tray2 media feed clutch (CL1) is turned ON.

B. Action

Relevant electrical parts	
Registration sensor (PS4) Tray2 media feed clutch (CL1) Transport motor (M3)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Initial check items	—	—
2	PS4 sensor check	PRCB PJ15-3 (ON)	C to D-5
3	CL1 operation check	PRCB PJ6-4 (REM)	C to D-16
4	M3 operation check	PRCB PJ11-1 to 7	L-4
5	Change PRCB.	—	—

17.3.3 Misfeed at fusing section

A. Detection timing

Type	Description
Detection of misfeed at fusing section	The exit sensor/1 (PS8) is not unblocked even after the lapse of a given period of time after the paper has blocked the exit sensor/1 (PS8).
	The duplex transport sensor (PS26) is not unblocked even after the lapse of a given period of time after the paper has blocked the exit sensor/1 (PS8) during paper take-up from the duplex unit.
Detection of paper left in fusing section	The exit sensor/1 (PS8) is blocked when the power switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant electrical parts	
Exit sensor/1 (PS8) Duplex transport sensor (PS26)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Initial check items	—	—
2	Make the sensor check of exit sensor/1 (PS8) and, if any abnormal condition is found, replace the fuser unit with a new one.	—	—
3	PS26 sensor check	PRCB PJ27-3 (ON)	C to D-3
4	Change PRCB.	—	—

17.3.4 Misfeed at transfer section

A. Detection timing

Type	Description
Detection of misfeed at transfer section	The registration sensor (PS4) is not blocked even after the lapse of a given period of time after the paper has unblocked PS4.
	The paper does not block the exit sensor/1 (PS8) even after the lapse of a given period of time after the paper has unblocked the registration sensor (PS4).
	When a sheet of paper is passing through the registration sensor (PS4), the pressure sequence of the 2nd transfer section has not started.
Detection of paper left in transfer section	The registration sensor (PS4) is unblocked when the power switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
	The media loop sensor (PS6) is unblocked when the power switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant electrical parts	
Registration sensor (PS4) Exit sensor/1 (PS8) Media loop sensor (PS6) 2nd image transfer pressure/retraction clutch (CL5)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Initial check items	—	—
2	PS4 sensor check	PRCB PJ15-3 (ON)	C to D-5
3	Make the sensor check of exit sensor/1 (PS8) and, if any abnormal condition is found, replace the fuser unit with a new one.	—	—
4	PS6 sensor check	PRCB PJ16-3 (ON)	C to D-4
5	CL5 operation check	PRCB PJ10-5 (REM)	C to D-7 to 8
6	Change PRCB.	—	—

17.3.5 Misfeed at duplex paper feed section

A. Detection timing

Type	Description
Detection of mis-feed at duplex paper feed section	The paper does not unblock the registration sensor (PS4) even after the lapse of a given period of time after the paper feed sequence has been started at the duplex option.

B. Action

Relevant Electrical Parts	
Registration sensor (PS4) Transport motor (M3)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Initial check items	—	—
2	PS4 sensor check	PRCB PJ15-3 (ON)	C to D-5
3	M3 operation check	PRCB PJ11-1 to 7	L-4
4	Change PRCB.	—	—

17.3.6 Misfeed at duplex paper transport section

A. Detection timing

Type	Description
Detection of mis-feed at duplex paper transport section	The duplex transport sensor (PS26) is not blocked even after the lapse of a given period of time after the paper has unblocked PS26.
	The registration sensor (PS4) is not unblocked even after the lapse of a given period of time after the paper has unblocked PS26.
Detection of paper left at duplex paper transport section	The duplex transport sensor (PS26) is unblocked when the power switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant Electrical Parts	
Duplex transport roller clutch (CL13) Duplex transport sensor (PS26) Registration sensor (PS4)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Com-ponent)
1	Initial check items	—	—
2	PS26 sensor check	PRCB PJ27-3 (ON)	C to D-3
3	PS4 sensor check	PRCB PJ15-3 (ON)	C to D-5
4	CL13 operation check	PRCB PJ26-6 (REM)	C to D-3
5	Change PRCB.	—	—

17.3.7 Misfeed at tray1 paper feed section

A. Detection timing

Type	Description
Detection of tray 1 paper feed section	The paper does not unblock the registration sensor (PS4) even after the lapse of a given period of time after the tray1 media feed clutch (CL2) is turned ON.

B. Action

Relevant electrical parts	
Registration sensor (PS4) Tray1 media feed clutch (CL2) Transport motor (M3)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Initial check items	—	—
2	PS4 sensor check	PRCB PJ15-3 (ON)	C to D-5
3	CL2 operation check	PRCB PJ6-2 (REM)	C to D-16
4	M3 operation check	PRCB PJ11-1 to 7	L-4
5	Change PRCB.	—	—

17.3.8 Misfeed at horizontal transport section

A. Detection timing

Type	Description
Detection of misfeed at horizontal transport section	The paper does not block the exit sensor/2 (PS31) even after the lapse of a given period of time after the paper has blocked the exit sensor/1 (PS8).

B. Action

Relevant electrical parts	
Exit sensor/1 (PS8) Exit sensor/2 (PS31)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Initial check items	—	—
2	Make the sensor check of exit sensor/1 (PS8) and, if any abnormal condition is found, replace the fuser unit with a new one.	—	—
3	PS31 sensor check	PRCB PJ33-6 (ON)	C to D-1
4	Change PRCB.	—	—

17.3.9 Misfeed at exit section

A. Detection timing

Type	Description
Detection of misfeed at exit section	• The exit sensor/2 (PS31) is not unblocked even after the lapse of a given period of time after the paper has blocked PS31.
Detection of paper left in exit section	• The exit sensor/2 (PS31) is blocked when the main power switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant electrical parts	
Exit sensor/2 (PS31)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Initial check items	—	—
2	PS31 sensor check	PRCB PJ33-6 (ON)	C to D-1
3	Change PRCB.	—	—

17.3.10 Misfeed at switch back section

A. Detection timing

Type	Description
Detection of misfeed at switch back section	• The switchback sensor (PS30) is not blocked by the paper even after the lapse of a given period of time after a switchback operation has been started.
Detection of paper left in switch back section	• The switchback sensor (PS30) is unblocked when the main power switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant electrical parts	
Switchback sensor (PS30)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Initial check items	—	—
2	PS30 sensor check	PRCB PJ33-3 (ON)	C to D-1
3	Change PRCB.	—	—

18. Malfunction code

18.1 Trouble codes (service call)

- The printer’s CPU performs a self-diagnostics function that, on detecting a malfunction, gives the corresponding malfunction code and maintenance call mark on the control panel.



A0FDF4E501DA

18.1.1 Trouble code list

- For the details of the malfunction codes of the options, see the service manual for the corresponding option.

Display message	Misfeed location	Detection timing
0010	Color PC drum motor malfunction	• The color PC drum motor does not rotate evenly even after the lapse of a given period of time while it is being started.
		• The motor lock signal remains HIGH for a given period of consecutive time while the color PC drum motor is being rotated.
0017	Transport motor mal-function	• The transport motor does not rotate evenly even after the lapse of a given period of time while it is being started.
		• The motor lock signal remains HIGH for a given period of consecutive time while the transport motor is being rotated.
0018	K developing motor malfunction	• The K developing motor does not rotate evenly even after the lapse of a given period of time while it is being started.
		• The motor lock signal remains HIGH for a given period of consecutive time while the K developing motor is being rotated.
001B	Color developing motor malfunction	• The color developing motor does not rotate evenly even after the lapse of a given period of time while it is being started.
		• The motor lock signal remains HIGH for a given period of consecutive time while the color developing motor is being rotated.
0045	Defogger fan motor malfunction	• The defogger fan motordoes not rotate evenly even after the lapse of a given period of time while it is being started.
		• The fan motor lock signal remains HIGH for a given period of consecutive time while the defogger fan motor is being rotated.

Display message	Misfeed location	Detection timing
0046	Fusing fan motor malfunction	• The fusing fan motor does not rotate evenly even after the lapse of a given period of time while it is being started.
		• The motor lock signal remains HIGH for a given period of consecutive time while the fusing fan motor is being rotated.
004A	Duplex cooling fan motor malfunction	• The duplex cooling fan motor does not rotate evenly even after the lapse of a given period of time while it is being started.
		• The motor lock signal remains HIGH for a given period of consecutive time while the duplex cooling fan motor is being rotated.
004C	Ozone ventilation fan motor malfunc-tion	• The ozone ventilation fan motor does not rotate evenly even after the lapse of a given period of time while it is being started.
		• The motor lock signal remains HIGH for a given period of consecutive time while the ozone ventilation fan motor is being rotated.
004E	DC power supply fan motor malfunction	• The DC power supply fan motor does not rotate evenly even after the lapse of a given period of time while it is being started.
		• The motor lock signal remains HIGH for a given period of consecutive time while the DC power supply fan motor is being rotated.
0060	Fusing motor malfunction	• The fusing motor does not rotate evenly even after the lapse of a given period of time while it is being started.
		• The motor lock signal remains HIGH for a given period of consecutive time while the fusing motor is being rotated.
0094	2nd image transfer pressure / retraction failure	• The 2nd image transfer retraction position sensor is not activated (retracted position) within a given period of time after the retraction sequence of the 2nd trans-fer roller has been started.
		• The 2nd image transfer retraction position sensor is not deactivated (pressed position) within a given period of time after the pressure sequence of the 2nd transfer roller has been started.
0096	1st image transfer pressure / retraction failure	• The 1st image transfer retraction position sensor is not activated (retracted position) within a given period of time after the intermediate transport motor has started rotating.
		• The 1st image transfer retraction position sensor is not deactivated (pressed position) within a given period of time after the intermediate transport motor has started rotating.

Display message	Misfeed location	Detection timing
0300	Polygon motor malfunction	• The polygon motor does not rotate evenly even after the lapse of a given period of time after it has been started. • The motor lock signal remains HIGH for a given period of consecutive time while the polygon motor is being rotated.
0310	Laser malfunction	• The SOS signal is not detected within a given period of time after the output of the laser has been started.
0500	Heating roller warm-up failure	• The thermistor /1 does not detect the specified temperature and the warm-up cycle is not completed even after the lapse of a given period of time after the cycle has been started.
0502	Thermistor open-circuit failure	• The temperature detected by the thermistor does not reach a predetermined level even after the lapse of a given period time after the warm-up cycle has been started.
0503	Thermistor resistance failure	• The difference between the temperature detected by thermistor/1 and that detected by thermistor/2 exceeds a predetermined value.
0510	Abnormally low heating roller temperature	• The temperature detected by the thermistor /1 remains lower than the specified value for a given period of time or longer.
0520	Abnormally high heating roller temperature	• The temperature detected by the thermistor /1 remains higher than the specified value for a given period of time or longer. • The heater lamp remains ON for a given period of time or longer.
0F50	OHP sensor malfunction	• It is determined that the OHP sensor is faulty through a check made at the end of the predrive.
0F52	Toner level sensor /Y malfunction	• An error occurs on the toner level sensor board (TLSB).
0F53	Toner level sensor / M malfunction	
0F54	Toner level sensor /C malfunction	
0F55	Toner level sensor /K malfunction	
13C0	Print control board malfunction	• A communication error occurs in print control board (PRCB).
13DD	Backup data error	• The printer determines that EEPROM is yet to be mounted when the main power switch is turned ON.
13F0	Engine control failure	• An undefined malfunction occurs in the engine section (PRCB, etc.).
3C00	Trouble related to security	• Contact the responsible people of KONICA MINOLTA when not returning in power switch OFF/ON.
3C10		
13E2	Engine flash ROM write error	• Flash ROM writing is found faulty during a check.
13E3	Engine flash ROM device fault	• An erase error occurs during erasing of data in flash ROM.

Display message	Misfeed location	Detection timing
CF01	BB error	• Contact the responsible people of KONICA MINOLTA before taking some countermeasures.
SCANNER MOTION ERROR CHECK SCANNER LOCK (0650)	Scanner home sensor abnormalities	• A low motor lock signal is not detected even after the lapse of a predetermined period of time after the polygon motor has been started. • The motor lock signal remains HIGH for a predetermined consecutive period of time while the polygon motor remains energized.
14A3	IR lamp malfunction	• The intensity of the light emitted from the exposure lamp of the scanner falls short of the specified value.
1038	Engine connect error	• Printer control board (PRCB) to MFP board/1 (MFPB/1) connection failure • The copier determines that there is an error if the print control board (PRCB) fails to send an acknowledgement signal to the MFP board/1 (MFPB/1) for a given period of time or more. • An error command signal is transmitted from the MFP board/1 (MFPB/1) to printer control board (PRCB). • An error status signal is transmitted from the printer control board (PRCB) to MFP board/1 (MFPB/1).
3FFF	Flash ROM write error	• The copier determines that there is an error if writing to the flash ROM fails during upgrading of the firmware. • When the power switch is turned ON, the error indicator lights up steadily and a corresponding message appears on the display. • If this error message appears, no operations can then be performed. It is not possible to upgrade the firmware from a PC connected through USB connection, either.
4FFF	Controller connect error	• MFP board/1 (MFPB/1) to MFP board/2 (MFPB/2) connection failure
C002	RAM error at startup (standard memory)	• RAM error at standard memory is detected during printer start-up.
C003	RAM error at startup (expanded memory)	• RAM error at expanded memory is detected during printer start-up.
C013	MAC address error at startup	• Invalid MAC address is detected during printer start-up.
C015	Boot ROM error at startup	• Boot ROM error is detected during printer start-up.
C022	NVRAM error at startup	• NVRAM error is detected during printer start-up.
C025	Controller ROM error (Configuration information error)	• Lead error of destination setting file is detected during the printer starting.
C026	Controller ROM error (Access error)	• Flash ROM access error is detected during the printer starting.
C027	Controller ROM error (Data error)	• Final check sum error is detected during the printer starting.
C050	HDD access error	• When correct access to the hard disk kit is failed during access.

Display message	Misfeed location	Detection timing
C051	HDD full error	• Range for user space is full during access to the hard disk kit.
C052	Compact flash access error	• When correct access to the compact flash card is failed during access.
C053	Compact flash full error	• Range for user space is full during access to the compact flash card.
C060	Firmware update error	• Firmware update fails to complete correctly during update.
FFFF	Interface communication error	• Correct communication is failed when receiving/sending the command between PRCB and MFPB/2.

18.2 Resetting a malfunction

- To reset a malfunction, turn the power switch OFF and then ON again.

18.3 Solution

18.3.1 0010: Color PC drum motor malfunction

Relevant electrical parts	
Color PC drum motor (M2)	Print control board (PRCB) DC power supply (DCPU)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the M2 connector for proper connection and correct as necessary.	—	—
2	Check M2 for proper drive coupling and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	M2 operation check	PRCB PJ11-8 to 14	L-3
5	Change M2.	—	—
6	Change PRCB.	—	—
7	Change DCPU.	—	—

18.3.2 0017: Transport motor malfunction

Relevant electrical parts	
Transport motor (M3)	Print control board (PRCB) DC power supply (DCPU)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the M3 connector for proper connection and correct as necessary.	—	—
2	Check M3 for proper drive coupling and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	M3 operation check	PRCB PJ11-1 to 7	L-4
5	Change M3.	—	—
6	Change PRCB.	—	—
7	Change DCPU.	—	—

18.3.3 0018: K developing motor malfunction

Relevant electrical parts	
K developing motor (M5)	Print control board (PRCB) DC power supply (DCPU)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the M5 connector for proper connection and correct as necessary.	—	—
2	Check M5 for proper drive coupling and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	M5 operation check	PRCB PJ8-8 to 14	L-5
5	Change M5.	—	—
6	Change PRCB.	—	—
7	Change DCPU.	—	—

18.3.4 001B: Color developing motor malfunction

Relevant electrical parts	
Color developing motor (M1) Driving unit	Print control board (PRCB) DC power supply (DCPU)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the color developing motor connector for proper connection and correct as necessary.	—	—
2	Check the PRCB connector for proper connection and correct as necessary.	—	—
3	M1 operation check	PRCB PJ8-1 to 7	L-5
4	Change driving unit.	—	—
5	Change PRCB.	—	—
6	Change DCPU.	—	—

18.3.5 0045: Defogger fan motor malfunction

Relevant electrical parts	
Defogger fan motor (FM5)	MFP board/1 (MFPB/1)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the FM5 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	FM5 operation check	PRCB PJ9-3 (LOCK)	C to D-14
4	Change FM5.	—	—
5	Change MFPB/1.	—	—

18.3.6 0046: Fusing fan motor malfunction

Relevant electrical parts	
Fusing fan motor (FM2)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the FM2 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	FM2 operation check	PRCB PJ21-3 (LOCK)	C to D-13
4	Change FM2.	—	—
5	Change PRCB.	—	—

18.3.7 004A: Duplex cooling fan motor malfunction

Relevant electrical parts	
Duplex cooling fan motor (FM4)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the FM4 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	FM4 operation check	PRCB PJ27-6 (LOCK)	C to D-4
4	Change FM4.	—	—
5	Change PRCB.	—	—

18.3.8 004C: Ozone ventilation fan motor malfunction

Relevant electrical parts	
Ozone ventilation fan motor (FM3)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the FM3 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	FM3 operation check	PRCB PJ31-3 (LOCK)	C to D-15
4	Change FM3.	—	—
5	Change PRCB.	—	—

18.3.9 004E: DC power supply fan motor malfunction

Relevant electrical parts	
DC power supply fan motor (FM1)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the FM1 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	FM1 operation check	PRCB PJ34-3 (LOCK)	C to D-14
4	Change FM1.	—	—
5	Change PRCB.	—	—

18.3.10 0060: Fusing motor malfunction

Relevant electrical parts	
Fusing motor (M4)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the M4 connector for proper connection and correct as necessary.	—	—
2	Check the fuser unit driving mechanism for possible overload and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	M4 operation check	PRCB PJ19-3 to 9	L-4
5	Change M4.	—	—
6	Change PRCB.	—	—

18.3.11 0094: 2nd image transfer pressure/retraction failure

Relevant electrical parts	
2nd image transfer retraction position sensor (PS10) 2nd image transfer pressure/retraction clutch (CL5) Transport motor (M3)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the M3 connector for proper connection and correct as necessary.	—	—
2	Check the CL5 connector for proper connection and correct as necessary.	—	—
3	Check M3 for proper drive coupling and correct as necessary.	—	—
4	Check CL5 for proper drive coupling and correct as necessary.	—	—
5	Check the PRCB connector for proper connection and correct as necessary.	—	—
6	PS10 sensor check	PRCB PJ16-8 (ON)	C to D-5
7	CL5 operation check	PRCB PJ10-5 (REM)	C to D-7 to 8
8	M3 operation check	PRCB PJ11-1 to 7	L-4
9	Change M3.	—	—
10	Change CL5.	—	—
11	Change PRCB.	—	—

18.3.12 0096: 1st image transfer pressure/retraction failure

Relevant electrical parts	
1st image transfer retraction position sensor (PS9) 1st image transfer pressure/retraction clutch (CL4) Transport motor (M3)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the M3 connector for proper connection and correct as necessary.	—	—
2	Check the CL4 connector for proper connection and correct as necessary.	—	—
3	Check M3 for proper drive coupling and correct as necessary.	—	—
4	Check CL4 for proper drive coupling and correct as necessary.	—	—
5	Check the PRCB connector for proper connection and correct as necessary.	—	—
6	PS9 sensor check	PRCB PJ7-11 (ON)	L-6
7	CL4 operation check	PRCB PJ19-2 (REM)	L-4 to 5
8	M3 operation check	PRCB PJ11-1 to 7	L-4
9	Change M3.	—	—
10	Change CL4.	—	—
11	Change PRCB.	—	—

18.3.13 0300: Polygon motor malfunction

Relevant electrical parts	
PH unit	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the cable and connector for proper connection and correct as necessary.	—	—
2	Change PH unit.	—	—
3	Change PRCB.	—	—

18.3.14 0310: Laser malfunction

Relevant electrical parts	
PH unit	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the cable and connector for proper connection and correct as necessary.	—	—
2	Change PH unit.	—	—
3	Change PRCB.	—	—

18.3.15 0500: Heating roller warm-up failure

18.3.16 0502: Thermistor open-circuit failure

18.3.17 0503: Thermistor resistance failure

18.3.18 0510: Abnormally low heating roller temperature

18.3.19 0520: Abnormally high heating roller temperature

Relevant electrical parts	
Fuser unit	Print control board (PRCB) DC power supply (DCPU)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the fuser unit for correct installation (whether it is secured in position).	—	—
2	Check the fuser unit, DCPU, and PRCB for proper connection and correct as necessary.	—	—
3	Change fuser unit.	—	—
4	Change PRCB.	—	—
5	Change DCPU.	—	—

18.3.20 0F50: OHP sensor malfunction

Relevant electrical parts	
OHP sensor (PS7)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the PRCB connector for proper connection and correct as necessary.	—	—
2	PS7 sensor check	PRCB PJ15-5 (ON)	C to D-6
3	Change PRCB.	—	—

18.3.21 0F52: Toner level sensor /Y malfunction

18.3.22 0F53: Toner level sensor /M malfunction

18.3.23 0F54: Toner level sensor /C malfunction

18.3.24 0F55: Toner level sensor /K malfunction

Relevant electrical parts	
Toner level sensor board (TLSB)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the cable and connector for proper connection and correct as necessary.	—	—
2	Change TLSB.	—	—
3	Change PRCB.	—	—

18.3.25 13C0: Print control board malfunction

Relevant electrical parts
Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Reboot the main body.	—	—
2	Change PRCB.	—	—

18.3.26 13DD: Backup data error

Relevant electrical parts	
Print control board (PRCB)	MFP board/1 (MFPB/1)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the cable and connector for proper connection and correct as necessary.	—	—
2	Change PRCB.	—	—
3	Change MFPB/1.	—	—

18.3.27 13F0: Engine control failure

Relevant electrical parts	
Print control board (PRCB)	MFP board/1 (MFPB/1)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electri-cal component)
1	Check the cable and connector for proper connection and correct as necessary.	—	—
2	Change PRCB.	—	—
3	Change MFPB/1.	—	—

18.3.28 13E2: Engine flash ROM write error

18.3.29 13E3: Engine flash ROM device fault

Relevant electrical parts	
Print control board (PRCB)	MFP board/1 (MFPB/1)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electri-cal component)
1	Check the cable and connector for proper connection and correct as necessary.	—	—
2	Change PRCB.	—	—
3	Change MFPB/1.	—	—

18.3.30 SCANNER MOTION ERROR CHECK SCANNER LOCK

Relevant electrical parts	
Scanner motor (M100) Print control board (PRCB)	DC power supply (DCPU)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electri-cal component)
1	Check to see if the lock lever of the Scanner unit is unlocked and unlock the lock lever if it is locked.	—	—
2	Check the M100 connector for proper connection and correct as necessary.	—	—
3	Check M100 for proper drive coupling and correct as necessary.	—	—
4	Check the PRCB connector for proper connection and correct as necessary.	—	—
5	M100 operation check.	MFPB P110	N-16
6	Change PRCB.	—	—
7	Change DCPU.	—	—

18.3.31 14A3: IR lamp malfunction

Relevant electrical parts	
Scanner unit	MFP board/1 (MFPB/1)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the exposure lamp for lighting condition when the power switch is turned ON and, if any faulty symptom is evident, correct the Scanner Unit.	—	—
2	Check the MFPB/1 connector for proper connection and correct as necessary.	—	—
3	Change scanner unit.	—	—
4	Change MFPB/1.	—	—

18.3.32 1038: Engine connect error

Relevant electrical parts	
Print control board (PRCB)	MFP board/1 (MFPB/1)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Turn OFF and ON the power switch.	—	—
2	Check the PRCB connector for proper connection and correct as necessary.	—	—
3	Check the MFPB/1 connector for proper connection and correct as necessary.	—	—
4	Check for proper connection between PRCB and MFPB/1 and correct as necessary.	—	—
5	Change MFPB/1.	—	—
6	Change PRCB.	—	—

18.3.33 3FFF: Flash ROM write error

Relevant electrical parts	
Print control board (PRCB)	MFP board/1 (MFPB/1)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Check the cable and connector for proper connection and correct as necessary.	—	—
2	Identify the specific firmware that is responsible for the error.	—	—
3	Rewrite the firmware.	—	—
4	Unplug parameter chip from PRCB and then plug it back in.	—	—
5	Change PRCB.	—	—
6	Change MFPB/1.	—	—

18.3.34 4FFF: Controller connect error

Relevant electrical parts	
MFP board/1 (MFPB/1)	MFP board/1 (MFPB/2)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Turn OFF and ON the power switch.	—	—
2	Check the MFPB/1 connector for proper connection and correct as necessary.	—	—
3	Check the MFPB/2 connector for proper connection and correct as necessary.	—	—
4	Check for proper connection between MFPB/1 and MFPB/2 and correct as necessary.	—	—
5	Change MFPB/2.	—	—
6	Change MFPB/1.	—	—

18.3.35 C002: RAM error at startup (standard memory) C003: RAM error at startup (expanded memory)

Relevant electrical parts	
MFP board/2 (MFPB/2)	Standard memory Expanded memory

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Reboot the main body.	—	—
2	Check connection state of the standard/ expanded memory and correct as necessary.	—	—
3	Check the MFPB/1 connector for proper connection and correct as necessary.	—	—
4	Change the standard/expanded memory.	—	—
5	Change MFPB/2.	—	—

18.3.36 C013: MAC address error at startup C015: BOOT ROM error at startup C022: NVRAM error at startup

Relevant electrical parts	
MFP board/2 (MFPB/2)	

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Reboot the main body.	—	—
2	Check the MFPB/1 connector for proper connection and correct as necessary.	—	—
3	Change MFPB/2.	—	—

18.3.37 C025: Controller ROM error (Configuration information error)
C026: Controller ROM error (Access error)
C027: Controller ROM error (Data error)

Relevant electrical parts	
MFP board/2 (MFPB/2)	

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Reboot the main body.	—	—
2	Check the MFPB/1 connector for proper connection and correct as necessary.	—	—
3	If this error message is displayed after update of firmware, conduct the firmware update procedures again.	—	—
4	Change MFPB/2.	—	—

18.3.38 C050: HDD access error

Relevant electrical parts	
MFP board/2 (MFPB/2)	Hard disk kit

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Reboot the main body.	—	—
2	Check the HDD connector for proper connection and correct as necessary.	—	—
3	Check the MFPB/1 connector for proper connection and correct as necessary.	—	—
4	Change HDD.	—	—
5	Change MFPB/2.	—	—

18.3.39 C051: HDD full error

Relevant electrical parts	
MFP board/2 (MFPB/2)	Hard disk kit

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Reboot the main body.	—	—
2	Delete the job hold in [PS/PCL PRINT] - [PROOF/PRINT MENU] to increase the available range for user space.	—	—
3	Check the HDD connector for proper connection and correct as necessary.	—	—
4	Format HDD with [SYS DEFAULT MENU] - [HDD FORMAT].	—	—
5	Change HDD.	—	—
6	Change MFPB/2.	—	—

18.3.40 C052: Compact flash access error

Relevant electrical parts	
MFP board/2 (MFPB/2)	Compact flash card

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Reboot the main body.	—	—
2	Check the compact flash for proper connection and correct as necessary.	—	—
3	Check the MFPB/1 connector for proper connection and correct as necessary.	—	—
4	Change compact flash.	—	—
5	Change MFPB/2.	—	—

18.3.41 C053: Compact flash full error

Relevant electrical parts	
MFP board/2 (MFPB/2)	Compact flash card

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electri-cal component)
1	Reboot the main body.	—	—
2	Delete the job hold in [PS/PCL PRINT] - [PROOF/PRINT MENU] to increase the available range for user space.	—	—
3	Check the compact flash for proper connection and correct as necessary.	—	—
4	Format HDD with [SYS DEFAULT MENU] - [CARD FORMAT].	—	—
5	Change compact flash.	—	—
6	Change MFPB/2.	—	—

18.3.42 C060: Firmware update error

Relevant electrical parts	
MFP board/2 (MFPB/2)	

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electri-cal component)
1	Reboot the main body.	—	—
2	Check the cable that has been used for update of the firmware for proper connection and correct as necessary.	—	—
3	Check the firmware update file and if the file is not the correct one, update the firmware again.	—	—
4	Check the firmware update procedure and if the procedure is not correct, update the firmware again.	—	—
5	Update the firmware again.	—	—
6	Check the MFPB/1 connector for proper connection and correct as necessary.	—	—
7	Change MFPB/2.	—	—

18.3.43 FFFF: Interface communication error

Relevant electrical parts	
MFP board/2 (MFPB/2)	Print control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Reboot the main body.	—	—
2	Check the MFPB/1 connector for proper connection and correct as necessary	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	Change PRCB.	—	—
5	Change MFPB/2.	—	—

19. Power supply troubles

19.1 Machine is not energized at all (DCPU operation check)

Relevant electrical parts	
Main power switch (SW1) Print control board (PRCB)	DC power supply (DCPU)

Step	Check item	Location (electrical component)	Result	Action
1	Is the power source voltage being applied to CN_INP on DCPU?	J-1	NO	Check wiring from power outlet to PG1 to CN1DCPU.
2	Are fuses (F1 and F2) on DCPU conducting?	—	NO	Change DCPU.
3	Are DC 24 V, DC 5 V and DC 3.3 V being applied to PJ1 on the print control board?	I-1	NO	Change PRCB.
			YES	Change DCPU.

19.2 Control panel indicators do not light

Relevant electrical parts	
MFP board/1 (MFPB/1) Operation board (OB)	DC power supply (DCPU)

Step	Check item	Location (electrical component)	Result	Action
1	Is the power source voltage being applied to CN_INP on DCPU?	J-1	NO	Check wiring from power outlet to PG1 to CN1DCPU.
2	Are fuses (F1 and F2) on DCPU conducting?	—	NO	Change DCPU.
3	Is P115 on MFPB/1 properly connected?	L to M-11 to 12	NO	Reconnect.
4	Is CN701 on OB properly connected?	N to O-11 to 12	NO	Reconnect.
			YES	Change OB.

19.3 Fusing heaters do not operate

Relevant electrical parts	
Front door switch (SW2) Right door switch (SW3) Fuser unit	DC power supply (DCPU)

Step	Check item	Location (electrical component)	Result	Action
1	Is the power source voltage being applied to CN_SIG on DCPU? The front door and right door should in closed position at this time.	J-1	NO	Check wiring from power outlet to PG1 to CN1DCPU.
2	Is the power source voltage being applied to CN_SIG on DCPU?	I-2	YES	Change fuser unit.
			NO	Change DCPU.

20. Image quality problems

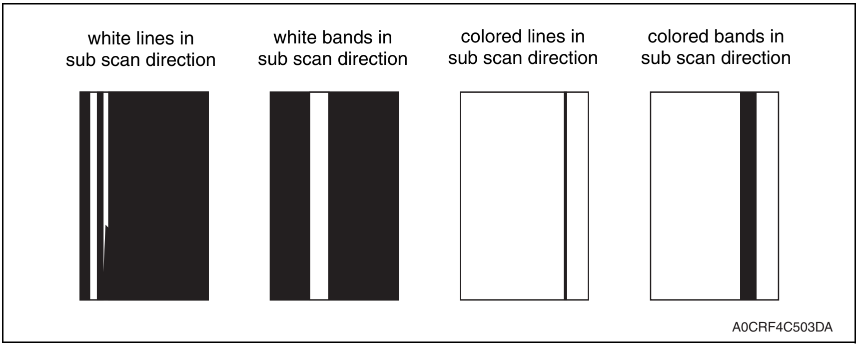
20.1 Printer system

NOTE

- **Typical faulty image samples shown in the following are all printed with A4S setting.**

20.1.1 White lines/bands, colored lines/bands in sub scan direction

A. Typical faulty images

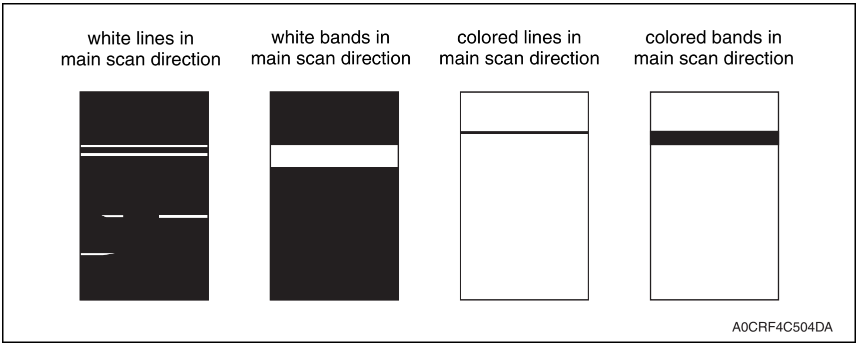


B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging unit	Are there scratches or lines evident on photo conductor surface?	YES	Change the imaging unit.
2		Is the outside dirty?	YES	Clean.
3		Is the connector or contact terminal between each imaging unit and PH unit connected properly?	NO	Clean the contact terminal or reconnect the connector.
4		Is the developing bias contact terminal in good contact?	NO	Clean the contact terminal or check the terminal position.
5	PH unit	Is the window surface dirty?	YES	Clean.
6	Transfer belt unit	Is the transfer belt dirty with fingerprints or oil?	YES	Clean.
7		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Change a scratched transfer belt for a transfer belt.
8	Transfer roller	Is the transfer roller dirty or scratched?	YES	Change the transfer roller.
9	Paper path	Is there a foreign matter on the paper path?	YES	Remove foreign matter.
10	Fuser unit	Is the fusing entrance guide plate dirty or scratched?	YES	Clean. Change the fuser unit.
11		Is the separator fingers dirty?	YES	Change the fuser unit.
12		Has the problem been eliminated through the checks of steps up to 11?	NO	Change the transfer belt unit. Change the PH unit.

20.1.2 White lines/bands, colored lines/bands in main scan direction

A. Typical faulty images



B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging unit	Are there scratches or lines evident on photo conductor surface?	YES	Change the imaging unit.
2		Is the outside dirty?	YES	Clean.
3		Is the connector or contact terminal between each imaging unit and PH unit connected properly?	NO	Clean the contact terminal or reconnect the connector.
4		Is the developing bias contact terminal in good contact?	NO	Clean the contact terminal or check the terminal position.
5	Transfer belt unit	Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Change a scratched transfer belt for a transfer belt.
6	Transfer roller	Is the transfer roller dirty or scratched?	YES	Change the transfer roller.
7	Paper path	Is there a foreign matter on the paper path?	YES	Remove the foreign matter.
8	Fuser unit	Is the fusing entrance guide plate dirty or scratched?	YES	Clean.
9		Is the separator fingers dirty?	YES	Change the fuser unit.
10		Has the problem been eliminated through the checks of steps up to 9?	NO	Change the DC power supply. Change the transfer belt unit.

20.1.3 Uneven density in sub scan direction

A. Typical faulty images



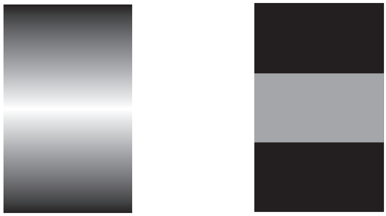
A0CRF4C505DA

B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging unit	Are there scratches or lines evident on photo conductor surface?	YES	Change the imaging unit.
2		Is the outside dirty?	YES	Clean.
3	PH unit	Is the window surface dirty?	YES	Clean.
4	Transfer belt unit	Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Change a scratched transfer belt for a transfer belt.
5		Is the terminal dirty?	YES	Clean.
6	Transfer roller	Is the transfer roller dirty or scratched?	YES	Change the transfer roller.
7		Has the problem been eliminated through the checks of steps up to 6?	NO	Change the transfer belt unit. Change the PH unit. Change the high voltage unit/1. Change the high voltage unit/2.

20.1.4 Uneven density in main scan direction

A. Typical faulty images



A0CRF4C506DA

B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging unit	Are there scratches or lines evident on photo conductor surface?	YES	Change the imaging unit.
2		Is the outside dirty?	YES	Clean.
3	Transfer belt unit	Is the contact on the rail of the Transfer belt in good contact with the mating part?	NO	Check or correct contact.
4		Is the transfer belt dirty with fingerprints or oil?	YES	Clean.
5		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Change a scratched transfer belt for a transfer belt.
6		Is the terminal dirty?	YES	Clean.
7	Transfer roller	Is the transfer roller dirty or scratched?	YES	Change the transfer roller.
8		Has the problem been eliminated through the checks of steps up to 8?	NO	Change the transfer belt unit. Change the high voltage unit/1. Change the high voltage unit/2.

20.1.5 Low image density

A. Typical faulty images



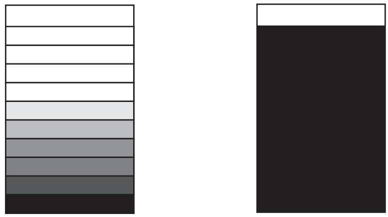
A0CRF4C507DA

B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging unit	Is the outside dirty?	YES	Clean.
2	PH unit	Is the window surface dirty?	YES	Clean.
3	Transfer belt unit	Is the contact on the rail of the transfer belt in good contact with the mating part?	NO	Check or correct contact.
4		Is the terminal dirty?	YES	Clean.
5	Paper	Is the paper damp?	YES	Change the paper with paper that has just been unwrapped.
6	IDC sensor board/R, /F	Is the sensor dirty?	YES	Clean.
7		Has the problem been eliminated through the checks of steps up to 6?	NO	Change the imaging unit. Change the transfer belt unit. Change the PH unit. Change the IDC sensor board. Change the print control board. Change the high voltage unit/1. Change the high voltage unit/2.

20.1.6 Gradation reproduction failure

A. Typical faulty images

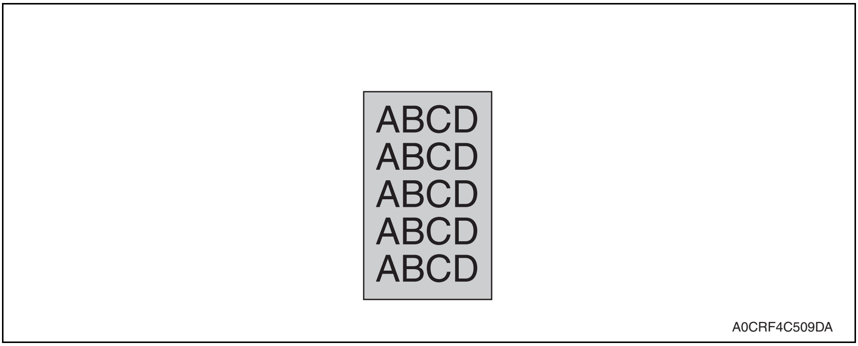


B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging unit	Is the outside dirty?	YES	Clean.
2	PH unit	Is the window surface dirty?	YES	Clean.
3	IDC sensor board/Re, /Fr	Is the sensor dirty?	YES	Clean.
4		Has the problem been eliminated through the checks of steps up to 3?	NO	Change the imaging unit. Change the PH unit. Change the IDC sensor board. Change the high voltage unit/1. Change the high voltage unit/2.

20.1.7 Foggy background

A. Typical faulty images



B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging unit	Are there scratches or lines evident on photo conductor surface?	YES	Change the imaging unit.
2		Is the outside dirty?	YES	Clean.
3		Is the connector or contact terminal between each imaging unit and PH unit connected properly?	NO	Clean the contact terminal or reconnect the connector.
4		Is the developing bias contact terminal in good contact?	NO	Clean the contact terminal or check the terminal position.
5	PH unit	Is the window surface dirty?	YES	Clean.
6	IDC sensor board/Re, /Fr	Is the sensor dirty?	YES	Clean.
7		Has the problem been eliminated through the checks of steps up to 6?	NO	Change the PH unit. Change the IDC sensor board.

20.1.8 Poor color reproduction

A. Typical faulty images



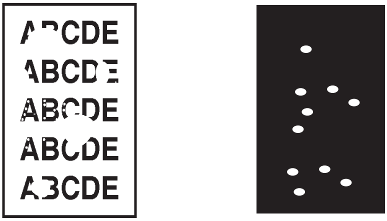
A0CRF4C510DA

B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper	Is the paper damp?	YES	Change the paper with paper that has just been unwrapped.
2	Transfer belt unit	Is the terminal dirty?	YES	Clean.
3	IDC sensor board/Re, /Fr	Is the sensor dirty?	YES	Clean.
4		Has the problem been eliminated through the checks of steps up to 3?	NO	Change the transfer belt unit. Change the IDC sensor board. Change the print control board. Change the high voltage unit/1. Change the high voltage unit/2.

20.1.9 Void areas, white spots

A. Typical faulty images



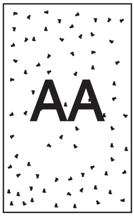
A0CRF4C511DA

B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging unit	Are there scratches or lines evident on photo conductor surface?	YES	Change the imaging unit.
2		Is the outside dirty?	YES	Clean.
3	Transfer belt unit	Is the transfer belt dirty with fingerprints, oil, or other foreign matter?	YES	Clean.
4		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Change a scratched transfer belt for a transfer belt.
5		Is the ground terminal connected properly?	NO	Correct.
6	Transfer roller	Is the transfer roller dirty or scratched?	YES	Change the transfer roller.
7	Paper path	Is there a foreign matter on the paper path?	YES	Remove foreign matter.
8		Is the fusing entrance guide plate dirty or scratched?	YES	Clean or change.
9		Has the problem been eliminated through the checks of steps up to 8?	NO	Change the transfer belt unit.

20.1.10 Colored spots

A. Typical faulty images



A0CRF4C512DA

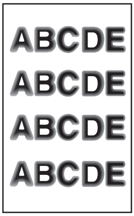
B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging unit	Are the spots in a single color?	YES	Change the imaging unit.
2		Are there scratches or lines evident on photo conductor surface?	YES	Change the imaging unit.
3	Transfer belt unit	Is the transfer belt dirty with fingerprints, oil, or other foreign matter?	YES	Clean.
4		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Change a scratched transfer belt for a transfer belt.
5		Is the transfer roller dirty or scratched?	YES	Change the transfer roller.
6	Paper path	Is there a foreign matter on the paper path?	YES	Remove foreign matter.
7	Fuser unit	Is the fusing roller dirty or scratched?	YES	Change the fuser unit.
8		Has the problem been eliminated through the checks of steps up to 7?	NO	Change the transfer belt unit.

20.1.11 Blurred image

A. Typical faulty images

blurred image



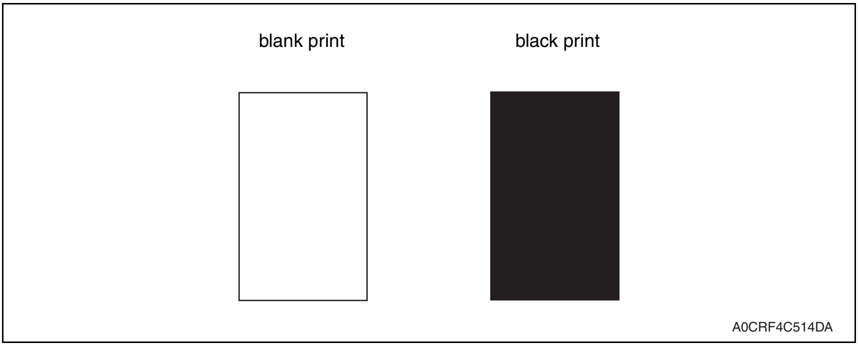
A0CRF4C513DA

B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	PH unit	Is the window surface dirty?	YES	Clean.
2	Imaging unit	Is the outside dirty?	YES	Clean.
3		Has the problem been eliminated through the checks of steps up to 2?	NO	Change the imaging unit. Change the PH unit.

20.1.12 Blank copy, black copy

A. Typical faulty images

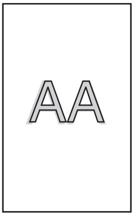


B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Image check	Does a blank print occur?	YES	Check the PH unit connector for proper connection.
2	Imaging unit	Is the coupling of the imaging unit drive mechanism installed properly?	NO	Check or correct drive transmitting coupling or change the imaging unit.
3		Is the charge corona voltage contact or photo conductor ground contact of the imaging unit connected properly?	NO	Check, clean, or correct the contact.
4	High voltage unit/1, /2	Is the connector corrected properly?	NO	Reconnect.
5		Has the problem been eliminated through the checks of steps up to 4?	NO	Change the high voltage unit/1. Change the high voltage unit/2. Change the print control board. Change the PH unit.

20.1.13 Incorrect color image registration

A. Typical faulty images



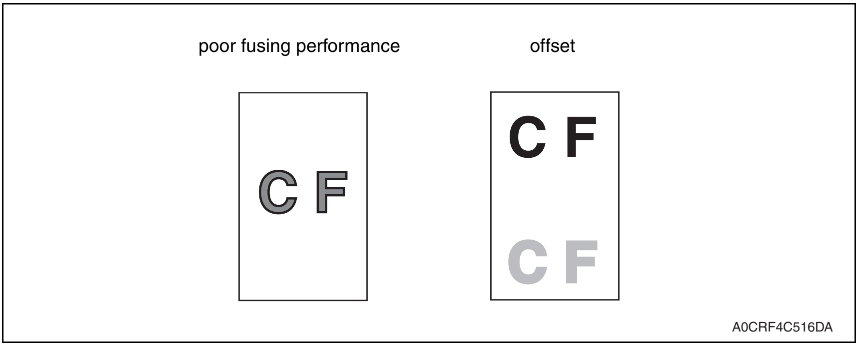
A0CRF4C515DA

B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Transfer belt unit	Is the transfer belt dirty with fingerprints, oil, or other foreign matter?	YES	Clean.
2		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Change a scratched transfer belt for a transfer belt.
3		Is the drive coupling to the machine dirty?	YES	Clean.
4	Transfer roller	Is the transfer roller dirty or scratched?	YES	Change the transfer roller.
5	Imaging unit	Is the imaging unit installed in position?	NO	Reinstall the imaging unit.
6		Is the photo conductor scratched?	YES	Change the imaging unit.
7		Has the problem been eliminated through the checks of steps up to 6?	NO	Change the transfer belt unit. Change the PH unit. Change the print control board.

20.1.14 Poor fusing performance, offset

A. Typical faulty images



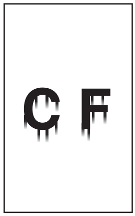
B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper	Does the paper being used conform to specifications?	NO	Change the paper.
2		Has the problem been eliminated through the check of step 1?	NO	Change the fuser unit. Change the print control board.

20.1.15 Brush effect

A. Typical faulty images

brush effect



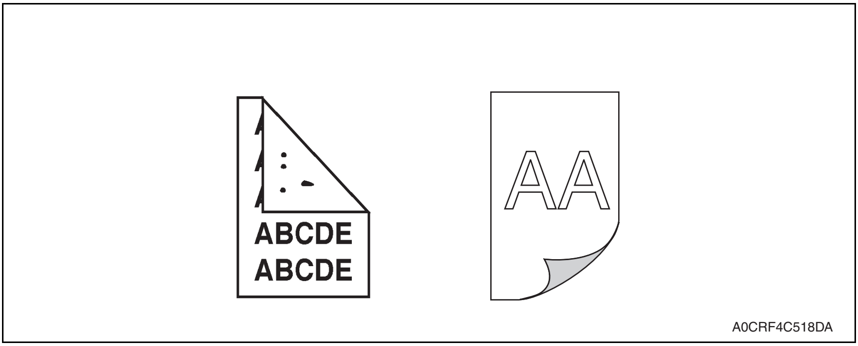
A0CRF4C517DA

B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper	Is the paper damp?	YES	Change the paper with paper that has just been unwrapped.
2		Does the paper being used conform to specifications?	NO	Change the paper.
3	Fuser unit	Is the fusing entrance guide plate dirty?	YES	Clean.
			NO	Change the fuser unit.

20.1.16 Back marking

A. Typical faulty images

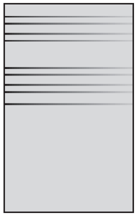


B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper path	Is there a foreign matter on the paper path?	YES	Remove the foreign matter.
2	Fuser unit	Is the fusing entrance guide plate dirty or scratched?	YES	Clean or change.
3		Is the fusing roller scratched or dirty?	YES	Change the fuser unit.
4	Transfer belt unit	Is the transfer belt dirty with fingerprints, oil, or other foreign matter?	YES	Clean.
5		Is the transfer roller dirty or scratched?	YES	Change the transfer roller.
6		Has the problem been eliminated through the checks of steps up to 5?	NO	Change the transfer belt unit. Change the fuser unit. Change the high voltage unit/1. Change the high voltage unit/2.

20.1.17 Uneven pitch

A. Typical faulty images



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B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Toner cartridge	Is the toner cartridge for each color of toner installed in position?	NO	Reinstall.
2	PH unit	Is the PH unit secured in position with the fixing screw?	NO	Secure it in position.
3	Imaging unit	Is the drive mechanism of the imaging unit dirty or damaged?	YES	Clean or change the imaging unit.
4		Is the photo conductor dirty, scratched, or worn?	YES	Change the imaging unit.
5	Transfer roller	Are the transfer roller and drive mechanism dirty, scratched, deformed, or worn?	YES	Change the transfer roller.
6	Fuser unit	Are the rollers and drive mechanism of the fuser unit dirty, scratched, deformed, or worn?	YES	Change the fuser unit.
7	Driving unit	During color printing, this symptom happens with 0.5 mm pitches.	YES	Change the driving unit.
8		Has the problem been eliminated through the checks of steps up to 7?	NO	Change the transfer belt.

21. FAX error

21.1 Communication error



21.2 Outline

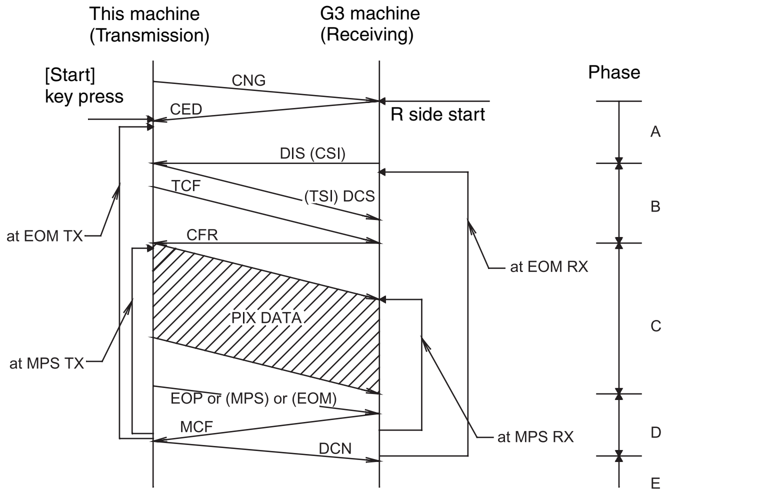
- Error caused by a problem of communication functioning. Five possible causes of errors are:

1. Communication is discontinued by a machine error.
2. Communication is discontinued by a machine trouble.
3. Communication is discontinued by an error occurring at the destination station.
4. Communication is discontinued by a protocol error.
5. ADF Error on trouble.

- When communication is discontinued due to item 3 or 4, transmission is retried. In other case, transmission is canceled without retry.

21.3 Error occurring during transmission

- The transmission error before “Phase-B” performs redial according to the redial interval of each country and the number of times.
  The transmission error after “Phase-C” performs redial only one time. Transmission is canceled when an error occurs again. (can change in Soft SW)



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21.3.1 Error occurring during reception

- Reception is canceled.

21.4 Error code

21.4.1 Reception

Code	Possible Causes of Error.
0001	Manual receive mode, nothing G3 signal received within 35 sec.
0003	Received DIS after sending DIS signal.
0004	Received DCN after sending DTC signal.
0006	Detect busy tone within receiving phase B.
0009	Can not receive any signal within 35 sec. in manual polling mode.
0010	Received DCN signal after sending DTC signal in polling RX.
0011	Can not receive any correct response after sending three DTC signal.
0012	Remote side password not match in polling RX/our side no any file to be polling.
0013	Can not receive carrier within 6 sec. after sending CFR in data phase C.
0014	Can not receive T.30 signal after sending FTT signal.
0015	Line polarity change within receiving phase B to D.
0016	Receive DCN signal after sending PTT signal.
0017	Can not receive any response from remote side after sending type of xxx_EOM signal.
0018	Can not detect energy within 6 sec. after sending FTT command.
0019	Received DCN signal sending CFR signal.
001A	No energy on line over 6 sec. within phase C before any corrected ECM frame.
001D	Detect flag but nothing after CFR.
0020	Can not correct frame within 6 sec. or in no-ECM mode, one decoding line over 6 sec.
0021	File full.
0022	Owing to noise interference on the line, receiving side can not receive correct data within specified time (no ECM).
0023	Received PWD error in RSD or upgrade F/W.
0024	TX and RX machine both are different machine ID in upgrade F/W.
0025	TX and RX machine both are different company ID in upgrade F/W.
0026	Remote monitor level error remote side can not access in upgrade F/W.
002A	Line problem.
0030	Can not receive any signal within 6 sec. at phase D.
0031	Received incorrect signal at phase D (not EOP, MPS, EOM, DCS PPS_Q, PPS_Q, etc.).
0032	Can not receive carrier within 6 sec. after sending MCF or RTP, RTN signal.
0033	Received DCN signal at phase D within pages (not last page).
0039	In non-ECM mode, when machine already received the data but next line data does not receive within 13.1 seconds.
003F	Remote side TSI not define in machine one touch or speed dial directory.
0040	Can not receive carrier within 6 sec. after sending CTR.
0041	Can not receive carrier within 6 sec. after sending PPR.
0042	Can not receive correct signal after sending RNR signal.
0043	Receive incorrect signal at phase D in ECM mode.
0044	Can not receive carrier /FSK signal within 6 sec. after sending MCF in ECM mode.
0045	Can not receive any correct signal after sending RNR response with ERR signal.
0046	Receive incorrect signal when sending RNR which response with ERR signal.

Code	Possible Causes of Error.
0047	Can not receive correct signal after sending ERR signal.
0048	Can not receive correct signal after receive PPS_PRI_Q or PRI_Q, EOR_PRI_Q.
0049	Can not receive correct signal after sending PIP/PIN signal within 13 sec.
004A	Line energy over threshold last 60 sec. after MCF, and can not detect FSK or carrier signal in ECM mode.
004B	Can not detect correct FSK signal even through detected FSK tone within 6 sec.
004C	Handshake fail during re-train or between page in V.34 RX.
004E	Receive DCN signal after sending DIS in V.34.
004F	Remote side disconnected after sending ANSam in V.8 phase.
0050	Can not receive any correct signal after sending CJ signal in V.8 phase.
0051	Can not receive phase 3 signal after phase 2 within 20 seconds in V.34.
0052	Can not receive phase 4 signal after phase 3 within 20 seconds in V.34.
0053	Modem disconnect after phase 4 in V.34.
0054	Remote side disconnected after phase 4 in V.8.
0055	Receive incorrect signal after sending DIS signal in V.34.
0056	Modem disconnect after sending CFR in V.34.
0057	Can not detect image signal within 6 seconds after sending CFR.
0058	Can not detect image signal within 6 seconds after modem enter to primary phase in V.34.
005A	Modem can not detect any correct ECM frame with 3 minutes in phase C.
005B	Can not detect phase 5 signal after primary channel within 6 seconds.
005C	Detect busy tone within control channel after phase C.
005D	Modem can not detect any correct ECM frame with 12 sec. in phase C.
005E	Can not detect control channel signal after received RCP frame within 6 seconds.
005F	Can not detect silence after sending JM signal for polling TX function.
0060	There are no any bulletin files to be polled in V.34.
0061	Machine can not detect V.21 or V.8 signal with 35 seconds.
0062	Modem disconnect in phase D after our side sending out flags sequence in control channel.
0063	Can not receive any flag sequence in control channel within 6 seconds in phase D.
0064	Can not detect any control channel signal in phase D within 60 seconds even through energy still on the line.
0065	Can not detect any control channel signal within 60 seconds after detect silence in phase D.
0066	Can not receive T.30 signal or carrier after sending CFR in V.34.
0070	User press stop key within receiving.
0071	Memory full within receiving.
0072	Received EOR_Q Signal.

21.4.2 Transmission

Code	Possible Causes of Error.
0080	Can not detect any G3 signal within 35 sec. specified by ITU-T in phase B.
0081	Received DTC signal in transmission phase.
0082	Transmitting unit receives a signal other than DIS or DTC and DCN in phase B.
0083	Detected FSK signal, but can not receive any signal within 35 seconds.
0084	Detect DCN signal in phase B.
0085	Transmitting unit sending DCS 3 times consecutively, but each time responds with DIS/DTC.
0086	Detected responds signal other than DTC, DIS, FTT, DCN or CFR after sending DCS.
0087	Training attempt has failed because speed unit can not adjust to low lower speed.
0088	Received DCN signal after sending out DCS signal.
008B	Receiver’s protocol of DIS is received, but it is not compatible with our machine.
008D	Receiver’s protocol of DIS is received, but remote side can not receive document temporary, may be cause by run out of paper or other reason.
008E	Remote side CSI number not defined in machine one touch or speed dial directory.
008F	Modem not ready to received V.34 data within 6 seconds after received CFR signal.
0090	Called side document not ready for our polling.
0091	Sending out DCS+TCF signal 3 times consecutively but no signal in response from receiver.
0092	Remote side disconnected within transmitting phase.
0093	Received DCN signal after sending out DCS signal for V.34.
0094	Time out during transmit ECM frame or RCP command.
0095	Wrong ID number when Polling RX.
0099	Remote side disconnect after primary channel.
009A	Can not detect any signal after sending CI signal.
009C	Received DCN after sending DTC in V.34 polling RX.
009D	Remote side hang up before V.34 modem enter phase 2 state in V.34 polling RX.
009F	Can not received any response from other side after sending PPS_EOM signal.
00A0	User stop or cancel transmission job.
00A1	Document JAM within transmission.
00AE	Can not finished V.8 procedure or detect V.21 signal after CM signal within 30 seconds.
00AF	Modem can not enter into control channel after TX side sending out RCP signal for V.34.
00B0	Can not received any command after our side retry there DCS signal in V.34 TX.
00B1	Can not finish V.8 procedure or detect V.21 signal after ANSam signal within 35 seconds.
00B2	Can not detect phase 2 signal after our side sending CJ signal within 30 seconds.
00B3	Can not detect correct V.21 or JM signal after sending CM signal.
00B4	Can not detect correct phase 2 signal within 25 second after CM/JM signal exchange.
00B5	Can not detect phase 3 signal after phase 2 within 25 seconds.
00B6	Can not detect phase 4 signal within 25 seconds after CM/JM exchange.
00B7	Can not detect phase 5 signal after phase 4 within 30 seconds.
00B8	Remote side disconnect after our side sending DCS signal in V.34.
00B9	Receive T.30 signal other than DIS, DCS, CFR after sending DCS signal in V.34.
00BA	Can not received correct signal after our side sending DTC signal in V.34.
00BB	Every time our side received DIS signal after sending DTC in V.34.

Code	Possible Causes of Error.
00BC	Modem can not ready within 10 seconds after entering primary channel in V.34.
00BD	Can not detect correct V.21 or JM signal after detected FSK frequency.
00BE	Remote side no document to be polled after V8 handshaking.
00BF	Capability no match.
00C0	Remote side disconnect before entering primary channel in V.34.
00C1	At phase-D, transmitting units out EOP 3 times consecutively, but receive no answer from receiving unit.
00C2	Remote side disconnect after sending out V.8 CM signal.
00C4	After sending MPS signal, the received is not one of MCF, RTN, PIP, PIN, RTP, DCN.
00C5	Received DCN signal after sending MPS signal.
00C9	At phase-D, sending MPS 3 times consecutively, but no answer from receiving unit.
00CA	After sending EOP signal, the received is not one of MCF, RTN, PIP, PIN, PRI-EOP, DCN.
00CB	After sending EOP signal, the received is DCN signal.
00CC	After sending EOM signal, the received is not one of MCF, RTN, PIP, PIN, RTP, DCN.
00CD	At phase-D, transmitting units out EOM 3 times consecutively, but receive no answer.
00CE	At phase-D, transmitting units out EOM, but receive DCN.
00CF	Received incorrect signal after sending DTC signal for V.34 polling.
00D0	Received ERR signal after sending EOR_NULL.
00D1	Received incorrect response after sending PPS_EOP signal in V.34.
00D2	Received DCN after sending PPS_EOP signal.
00D3	Received DCN after sending PPS_NULL signal.
00D4	Received DCN after sending PPS_EOM signal.
00D5	T5 timeout.
00D8	Can not detect correct phase 3 signal for polling within 25 seconds.
00D9	Can not detect correct phase 3 signal after detect silence after phase 2.
00DA	Can not detect phase 4 signal within 30 seconds or remote side hang up over 6 seconds.
00DB	Can not received any T.30 signal within 15 seconds within phase 4.
00DC	Received T.30 signal in phase 4 other than DCS, DIS or DTC.
00DE	Remote side no SUB capability in V.34.
00E0	At phase-D, transmitting units out PPS_NULL 3 times consecutively but receive not answer.
00E1	Received incorrect response after sending PPS_NULL.
00E2	Can not receive any response in RR response procedure after sending PPS_NULL.
00E4	At phase-D, transmitting units out PPS_MPS 3 times consecutively but receive no answer.
00E5	Received incorrect response after sending PPS_MPS.
00E6	Can not receive any response in RR response procedure after sending PPS_MPS.
00E7	Received DCN after sending PPS_MPS.
00E8	At phase-D, transmitting units out PPS_EOP 3 times consecutively but receive no answer.
00E9	Receive PIN signal after sent last page three times.
00EA	Can not receive any response in RR response procedure after sending PPS_EOP.
00EB	At phase-D, transmitting units out PPS_EOM 3 times consecutively but receive no answer.
00EC	Received incorrect response after sending PPS_EOM.
00ED	Can not receive any response in RR response procedure after sent out PPS_EOM.

Code	Possible Causes of Error.
00EE	At phase-D, transmitting units out EOR_NULL 3 times consecutively but receive no answer.
00EF	Received incorrect response after sending EOR_NULL.
00F0	Can not receive any response procedure after sending EOR_NULL.
00F1	At phase-D, transmitting units out EOR_MPS 3 times consecutively but receive no answer.
00F2	Received incorrect response after sending EOR_MPS.
00F3	Received ERR signal after sending EOR_MPS.
00F4	Can not receive any response in RR response procedure after sending EOR_MPS.
00F5	At phase-D, transmitting units out EOR_EOP 3 times consecutively but receive no answer.
00F6	Received incorrect response after sending EOR_EOP.
00F7	After Received ERR, our side can not received response after sending EOR_EOP command.
00F8	At phase-D, transmitting units out EOR_EOM 3 times consecutively but receive no answer.
00F9	Received incorrect response after sending EOR_EOM.
00FA	Received ERR signal after sending EOR_EOM.
00FB	Can not receive any response in RR response procedure after sending EOR_EOM.
00FC	Can not receive any response after sending CTC.
00FD	Can not speed down to lower speed in ECM mode.
00FE	Memory full for transmission.
00FF	Redail all fail.

22. Scan error

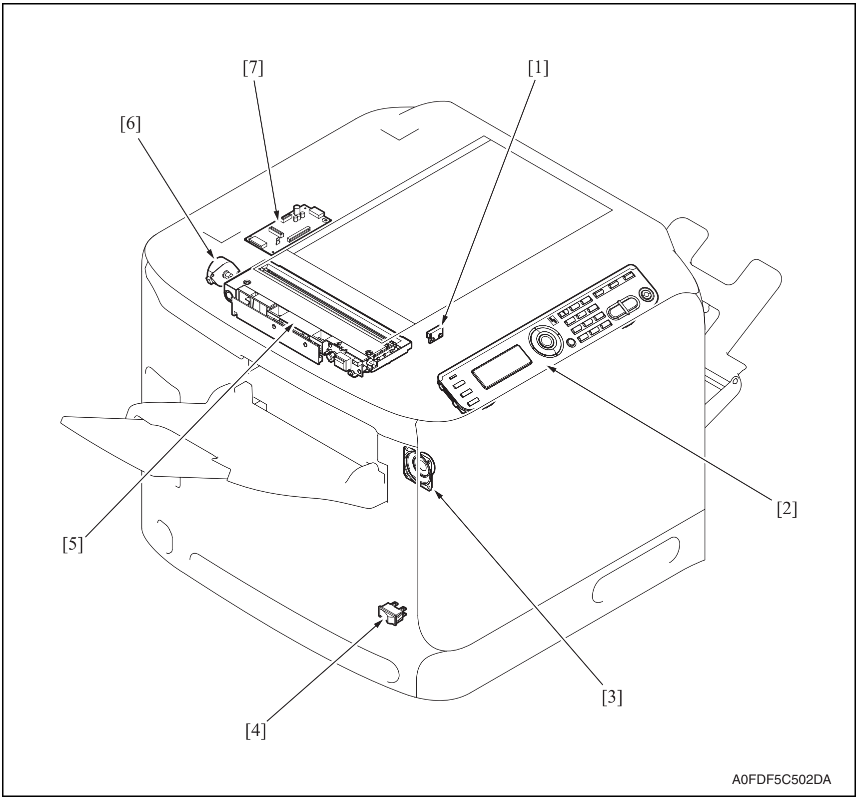
Code	Display	Content
0100	CANNOT CONNECT SMTP Server	• While the scanned document was being sent in Scan mode, a connection with the specified server could not be established.
0101	CANNOT CONNECT POP3 Server	
0102	CANNOT CONNECT DNS Server	
0103	CANNOT CONNECT FTP Proxy Server	
0104	CANNOT CONNECT SMB Server	
0106	FTP SERVER ERROR	• The file cannot be saved on the indicated server.
0107	SMB SERVER ERROR	
0108	WRONG PASSWORD FTP Server	• The password is incorrect, so the indicated server could not be accessed.
0109	WRONG PASSWORD SMB Server	
010A	WRONG PASSWORD SMTP Server	
010B	WRONG PASSWORD POP3 Server	
010D	SERVER MEMORY FULL SMTP Server	• The memory of the SMTP server has become full.
010F	CANNOT GET IP SMTP Server	• The IP address of the SMTP server could not be obtained from the DNS server.
0110	CANNOT GET IP POP3 Server	
0111	CANNOT GET IP FTP Server	
0113	COMMUNICATION ERROR SMTP Server	• While data was being sent in Scan mode, the connection to the server was interrupted.
0114	COMMUNICATION ERROR FTP Server	
0115	COMMUNICATION ERROR SMB Server	
0118	DISCONNECT SMTP Server	• The connection to the server was interrupted.
0119	DISCONNECT POP3 Server	
011B	DISCONNECT FTP Proxy Server	
011C	DISCONNECT SMB Server	

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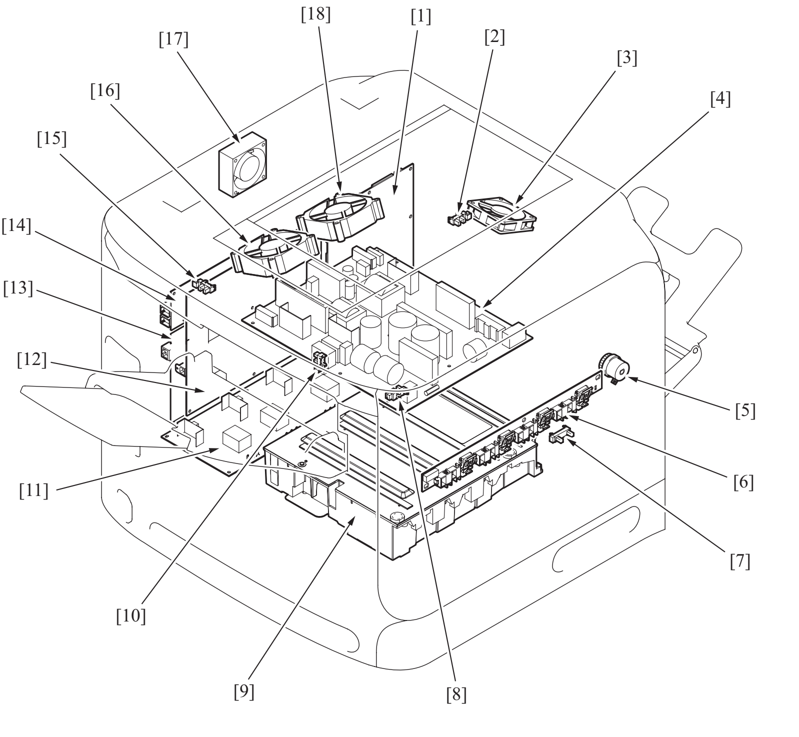
Appendix

23. Parts layout drawing

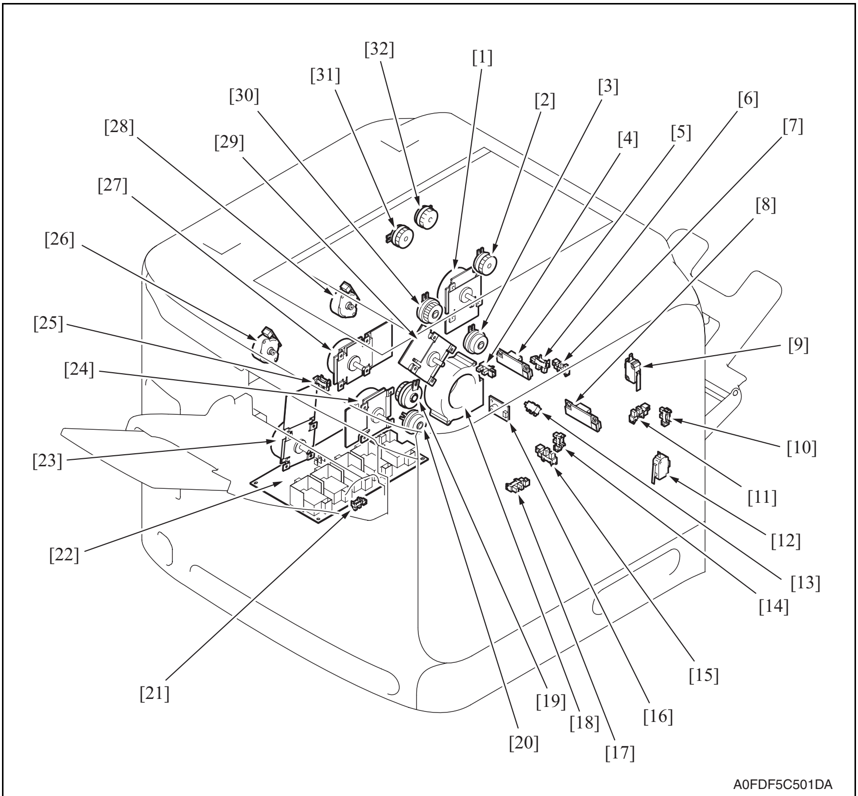
23.1 Main body



[1] Original cover sensor (RS100)
[2] Operation board (OB)
[3] Speaker (SP1)
[4] Main power switch (SW1)
[5] Exposure unit
[6] Scanner motor (M100)
[7] Relay board (REYB)

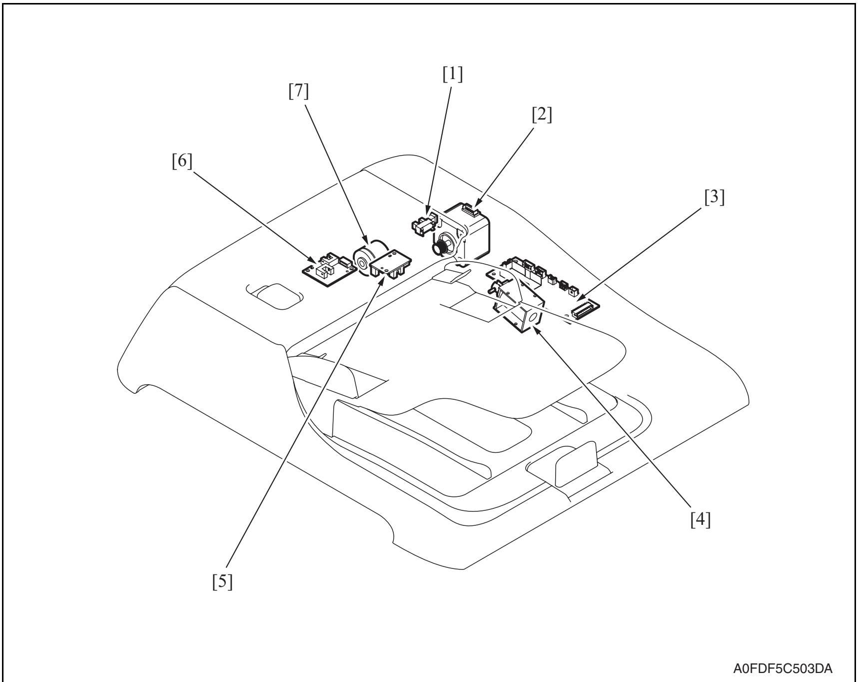


[1]	Print control board (PRCB)	[10]	Exit sensor/2 (PS31)
[2]	Switchback sensor (PS30)	[11]	High voltage unit/2 (HV2)
[3]	Duplex cooling fan motor (FM4)	[12]	MFP board/1 (MFPB/1)
[4]	DC power supply (DCPU)	[13]	MFP board/2 (MFPB/2)
[5]	2nd image transfer pressure/retraction clutch (CL5)	[14]	NCU board (NCUB)
[6]	Toner level sensor board (TLSB)	[15]	Media full sensor (PS32)
[7]	Waste toner sensor (PS11)	[16]	DC power supply fan motor (FM1)
[8]	Scanner open sensor (PS24)	[17]	Defogger fan motor (FM5)
[9]	PH unit	[18]	Fusing fan motor (FM2)



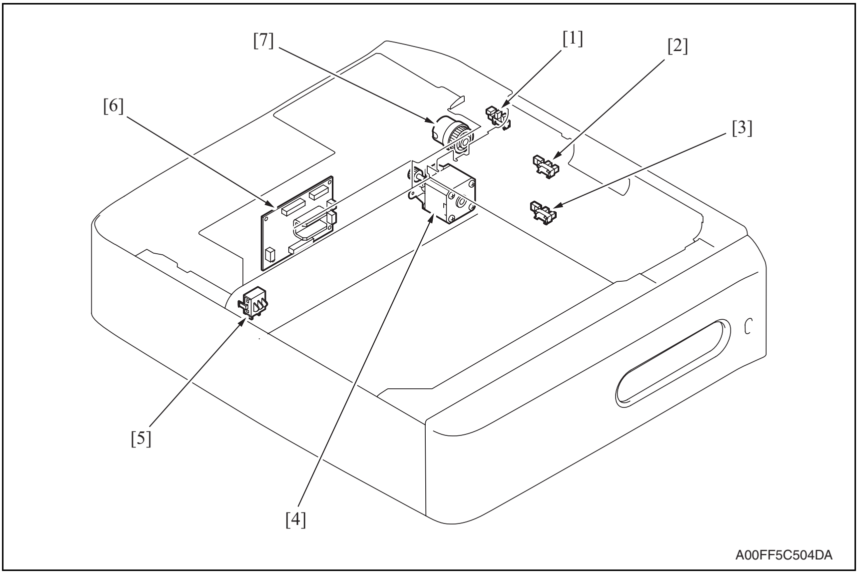
[1] Fusing motor (M4)
[2] Duplex transport roller clutch (CL13)
[3] Tray1 media feed clutch (CL2)
[4] 2nd image transfer retraction position sensor (PS10)
[5] IDC sensor board/Re (IDCSB/R)
[6] Media loop sensor (PS6)
[7] Duplex transport sensor (PS26)
[8] IDC sensor board/Fr (IDCSB/F)
[9] Front door switch (SW2)
[10] Right door sensor (PS21)
[11] Front door sensor (PS22)
[12] Right door switch (SW3)
[13] OHP sensor (PS7)
[14] Registration sensor (PS4)
[15] Tray1 media empty sensor (PS3)
[16] Temperature/ humidity sensor (TEM/HUMS)
[17] Tray2 media empty sensor (PS1)
[18] Ozone ventilation fan motor (FM3)
[19] Registration roller clutch (CL3)
[20] Tray2 media feed clutch (CL1)
[21] Tray2 set switch (SW5)
[22] High voltage unit/1 (HV1)
[23] Color developing motor (M1)
[24] K developing motor (M5)
[25] 1st image transfer retraction position sensor (PS9)
[26] Toner supply motor /Y, M (M6)
[27] Color PC drum motor (M2)
[28] Toner supply motor/C, K (M7)
[29] Transport motor (M3)
[30] 1st image transfer pressure/retraction clutch (CL4)
[31] Switchback roller reverse clutch (CL12)
[32] Switchback roller feed clutch (CL11)

23.2 Auto Document Feeder Unit



[1] Top cover sensor (PS1)
[2] Transport motor (M1)
[3] DF control board (DFCB)
[4] Retraction solenoid (SD1)
[5] Relay board/1 (REYB1)
[6] Relay board/2 (REYB2)
[7] Feed clutch (CL1)

23.3 Lower feeder unit (option)



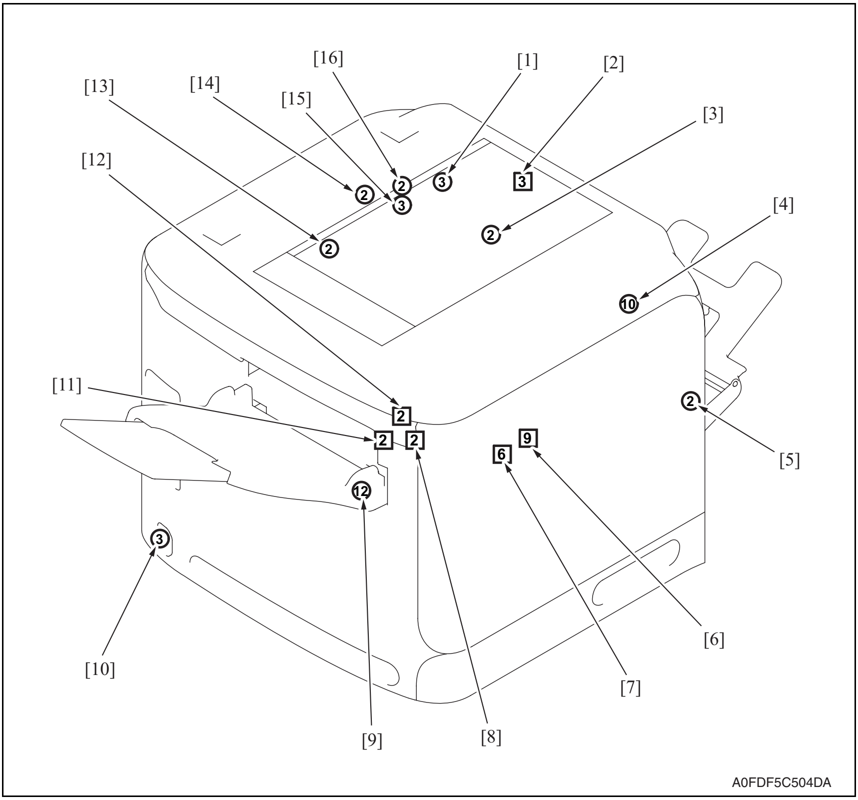
[1]	Right door sensor (PS5)	[5]	Media size switch (SW1)
[2]	Media feed sensor (PS3)	[6]	PC control board (PCCB)
[3]	Media empty sensor (PS1)	[7]	Media feed clutch (CL1)
[4]	Transport motor (M1)		

24. Connector layout drawing

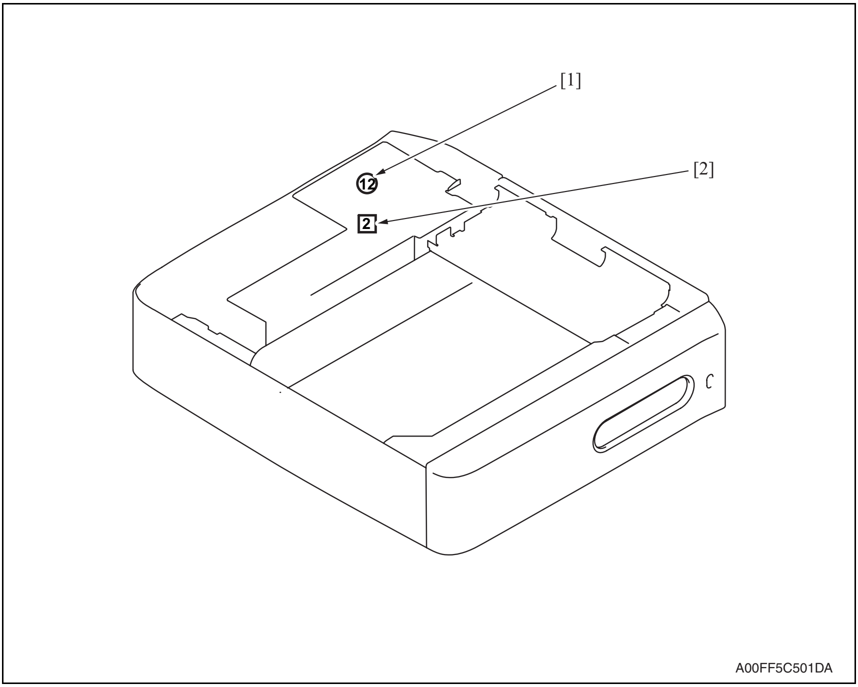
Description

Number of Pin → ① Possible to confirm by removing external cover.

→ [1] Not possible to confirm by removing external cover.



No.	CN No.	Location	No.	CN No.	Location
[1]	CN201	E-1	[9]	CN25	E-17 to 18
[2]	CN27	E-4	[10]	CN2	O-1
[3]	CN103	E-4	[11]	CN24	E-16
[4]	CN100	E-13	[12]	CN23	E-16
[5]	CN12	E-7	[13]	CN21	K-4 to 5
[6]	CN202	F-4 to 5	[14]	CN51	F-2
[7]	CN201	F-3 to 4	[15]	CN53	F-3
[8]	CN28	E-15	[16]	CN52	F-3



No.	CN No.	Location	No.	CN No.	Location
[1]	CN25	C-3	[2]	CN29	C-5

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KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

Auto Document Feeder Unit

2008.09

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

Revision history

After publication of this service manual, the parts and mechanism may be subject to change for improvement of their performance.
Therefore, the descriptions given in this service manual may not coincide with the actual machine.

When any change has been made to the descriptions in the service manual, a revised version will be issued with a revision mark added as required.

Revision mark:

- To indicate clearly a section revised, △1 is shown at the left margin of the revised section.
  The number inside △1 represents the number of times the revision has been made.

- To indicate clearly a page that contains the revision, ▲1 is shown near the page number of the corresponding page.
  The number inside ▲1 represents the number of times the revision has been made.

NOTE

Revision marks shown in a page are restricted only to the latest ones with the old ones deleted.

- When a page revised in Ver. 2.0 has been changed in Ver. 3.0:
  The revision marks for Ver. 3.0 only are shown with those for Ver. 2.0 deleted.
- When a page revised in Ver. 2.0 has not been changed in Ver. 3.0:
  The revision marks for Ver. 2.0 are left as they are.

Date	Service manual Ver.	Revision mark	Descriptions of revision
2008/09	1.0	—	Issue of the first edition

CONTENTS

Auto Document Feeder Unit

Outline

Maintenance

Adjustment/Setting

Troubleshooting

Outline

1. Product Specifications

A. Type

Name	Automatic Document Feeder
Installation	Inserted at upper-rear side of main body
Document alignment	Center
Document loading	Face up

B. Functions

Modes	1-Sided Mode / 2-Sided Mode

C. Paper

Type of document	1-Sided mode: 50 g/m^2 to 128 g/m^2	
	2-Sided mode: 50 g/m^2 to 128 g/m^2	
Detectable document size	A5S, B5S, A4S, LegalS (8.5 x 14), LetterS (8.5 x 11), Invoice (8.5 x 5.5)	
	Width	140 to 216 mm
	Length	148 to 355.6 mm
Capacity	50 sheets (80 g/m^2) or load height of 8 mm or less.	

D. Maintenance

Machine durability	150,000 originals feed or 5 years, whichever comes first

E. Paper feed prohibited originals

- The following types of originals should not be used.

Types of document	Possible malfunctions
Original that is stapled or clipped.	Feed failure, damage to the original, or drive failure due to clip clogging
Pasted originals	Misfeed, broken original, or folded paste-up edges
Book original	Feed failure, damage to the original, or drive failure
Original weighing less than 35 g/m^2 or 210 g/m^2 or more	Feed failure
Torn original	Feed failure, damaged sheet
Highly curled original (15 mm or more)	Original misfeed due to dog-ear or skew
OHP transparencies	Feed failure
Label Sheet	Feed failure
Photographic paper, gloss enamel paper, or other gloss original	Feed failure, damage to the original, or drive failure
Offset master	Feed failure
Sheets clipped or notched	Damaged sheet
Less-than-0.05-mm-thick thin paper	Misfeed
More-than-0.15-mm-thick thin paper	Misfeed

F. Paper feed not guaranteed originals

- If fed, paper feed will be possible to some extent but trouble occurrence will be possible.

Type of original	Possible trouble
Sheets lightly curled (Curled amount: 10 - 15 mm)	Dog-eared, exit failure
Heat sensitive paper	Edge folded, exit failure, transport failure
Translucent paper	Take-up failure, transport failure
Paper immediately after paper exit from the main unit	Take-up failure, transport failure
Paper with many punched holes (e.g., loose leaf) limited to vertical feeding	Multi-page feed due to flashes from holes
Sheets with 2 to 4 holes	Transport failure
Sheets two-folded or Z-folded	Transport failure, image deformation
Sheets folded	Image deformation, multi-page feed, take-up failure

G. Machine specifications

Power requirements	DC 24 V (supplied from the main body)
	DC 3.3 V (supplied from the main body)
	DC 5 V (supplied from the main body)
Dimensions	506 mm (W) x 432 mm (D) x 89 mm (H) 20 inch (W) x 17 inch (D) x 3.5 inch (H)
Weight	4.5 kg (10 lb)

H. Operating

- Conforms to the operating environment of the main body.

NOTE

- **These specifications are subject to change without notice.**

Maintenance

2. Periodic check

2.1 Maintenance procedure (Periodic parts check)

- Periodically replaced parts are not employed.

3. Other

3.1 Disassembly/Adjustment prohibited items

A. Paint-locked screws

NOTE

- **To prevent loose screws, a screw lock in blue or green series color is applied to the screws.**
- **The screw lock is applied to the screws that may get loose due to the vibrations and loads created by the use of machine or due to the vibrations created during transportation.**
- **If the screw lock coated screws are loosened or removed, be sure to apply a screw lock after the screws are tightened.**

B. Red-painted screws

NOTE

- **The screws which are difficult to be adjusted in the field are painted in red in order to prevent them from being removed by mistake.**
- **Do not remove or loosen any of the red-painted screws in the field. It should also be noted that, when two or more screws are used for a single part, only one representative screw may be marked with the red paint.**

C. Variable resistors on board

NOTE

- **Do not turn the variable resistors on boards for which no adjusting instructions are given in Adjustment/Setting.**

D. Removal of PWBs

⚠ CAUTION

- **When removing a circuit board or other electrical component, refer to "Handling of PWBs" and follow the corresponding removal procedures.**
- **The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.**
- **Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.**

3.2 Disassembly/Assembly/Cleaning list (other parts)

3.2.1 Disassembly/Assembly parts list

No	Section	Part name	Ref.Page
1	Rollers	Paper feed roller	P.6
2		Pick-up roller	P.7
3	Unit	Auto Document Feeder Unit	P.9
4	Exterior parts	Top cover	P.10
5		ADF cover	P.10
6		Document feeder tray	P.11
7	Board and etc	DF control board (DFCB)	P.11
8	Other part	Transport motor (M1)	P.12
9		Retraction solenoid (SD1)	P.12
10		Separator pad	P.13

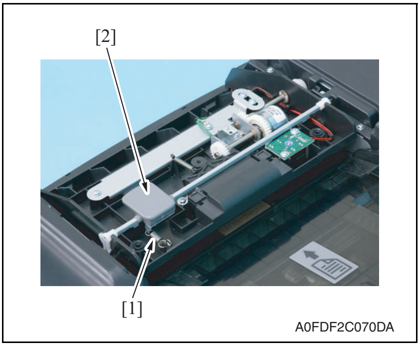
3.2.2 Cleaning parts list

No	Section	Part name	Ref.Page
1	Rollers	Paper feed roller	P.14
2		Pick-up roller	
3	Other part	Separator pad	P.14

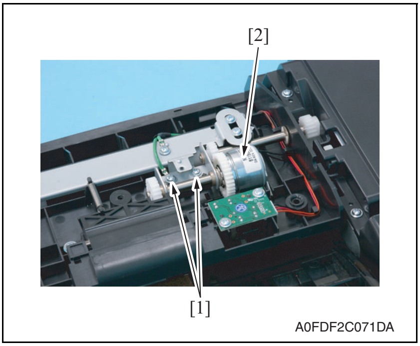
3.3 Disassembly/Assembly procedure

3.3.1 Paper feed roller

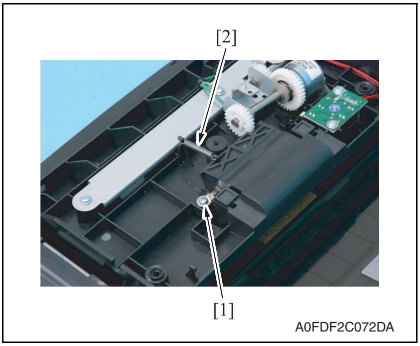
1. Open the top cover.
2. Remove the top cover.
   See P.10



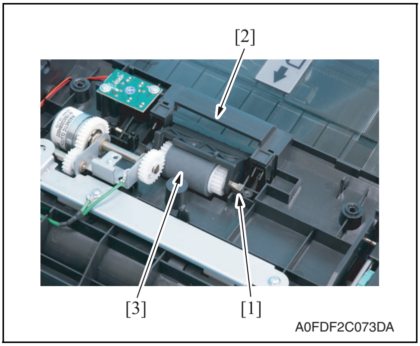
3. Remove the spring [1], and remove the lock lever assy [2].



4. Remove the two screws [1] to free the feed clutch [2].



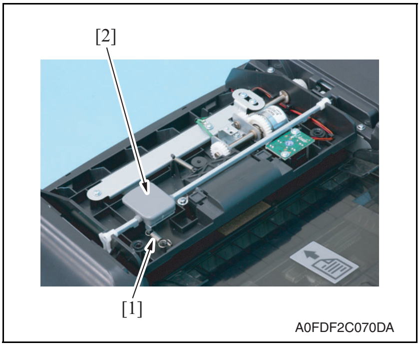
5. Remove the screw [1] and spring [2].



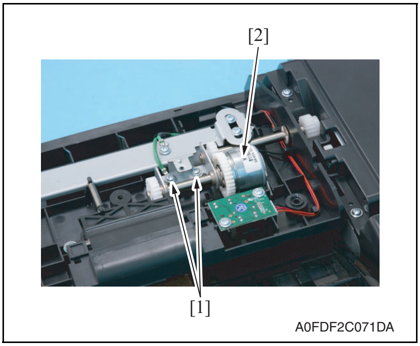
6. Remove the shaft [1] and the pick-up/paper feed roller assy [2].
7. Remove the paper feed roller [3].

3.3.2 Pick-up roller

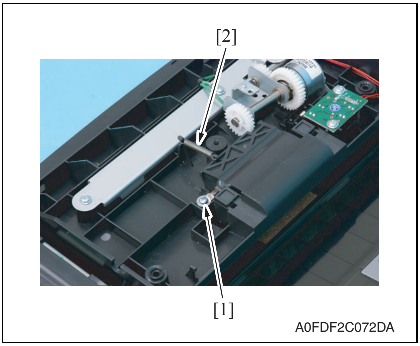
1. Open the top cover.
2. Remove the top cover.
   See P.10



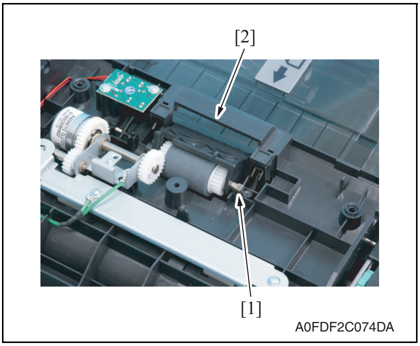
3. Remove the spring [1], and remove the lock lever assy [2].



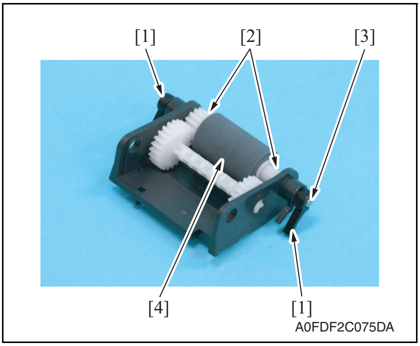
4. Remove the two screws [1] to free the feed clutch [2].



5. Remove the screw [1] and spring [2].



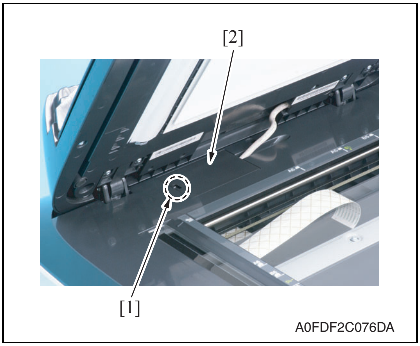
6. Remove the shaft [1] and the pick-up/paper feed roller assy [2].



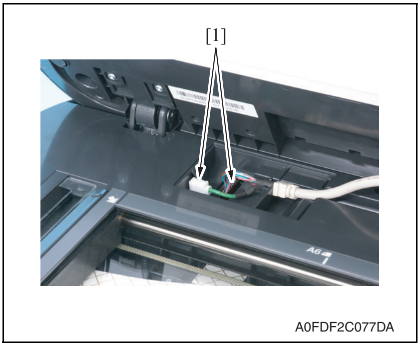
7. Remove two stoppers [1] and two E-rings [2].
8. Remove the shaft [3] and the pick-up roller [4].

3.3.3 Auto Document Feeder Unit

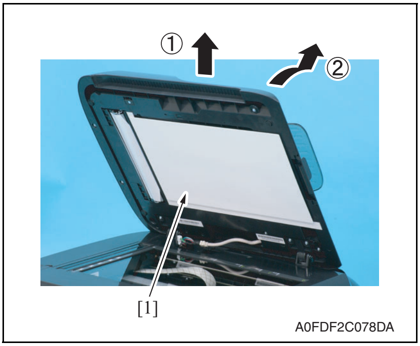
1. Open the auto document feeder unit.



2. Unhook the tab [1], and remove the connector cover [2].

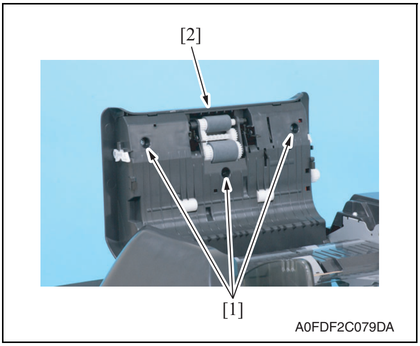


3. Disconnect two connectors [1].



4. Following the order of the arrows shown, remove the automatic document feeder unit [1].

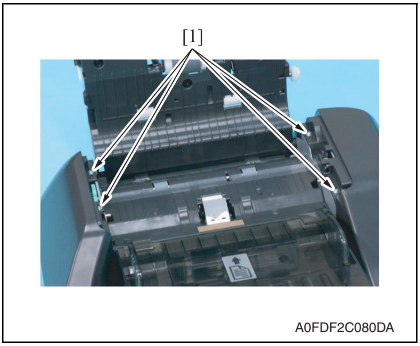
3.3.4 Top cover



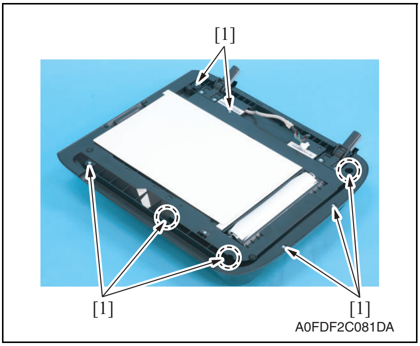
1. Open the top cover.
2. Remove three screws [1], and remove the top cover [2].

3.3.5 ADF cover

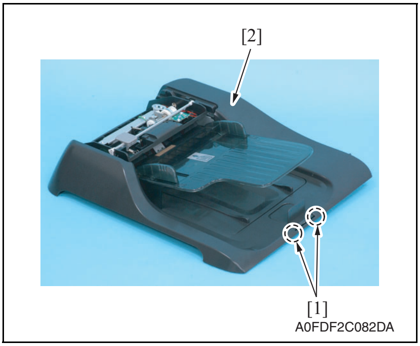
1. Remove the auto document feeder unit.
   See P.9
2. Remove the top cover.
   See P.10



3. Remove four screws [1].



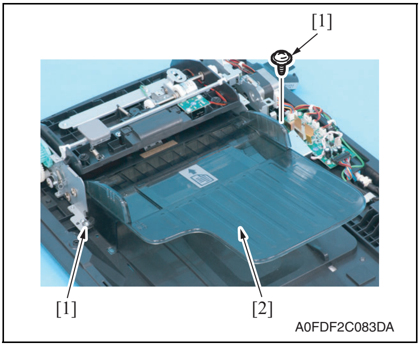
4. Remove eight screws [1].



5. Unhook two tabs [1], and remove the ADF cover [2].

3.3.6 Document feeder tray

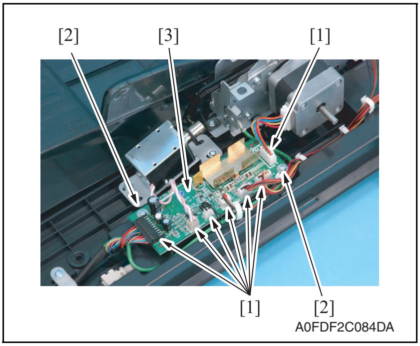
1. Remove the ADF cover.
   See P.10



2. Remove two screws [1] and the document feeder tray [2].

3.3.7 DF control board (DFCB)

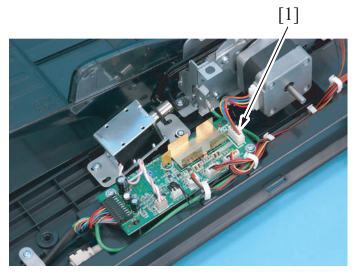
1. Remove the ADF cover.
   See P.10



2. Disconnect the seven connectors [1] and remove the two screws [2]. Then, remove the DF control board [3].

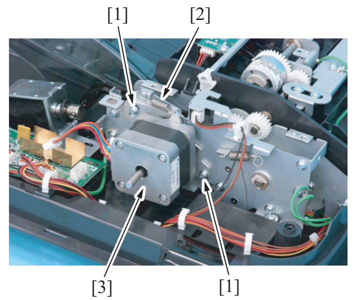
3.3.8 Transport motor (M1)

1. Remove the ADF cover.
See P.10



A0FDF2C085DA

2. Disconnect the connector (PA7) [1] from the DF control board.

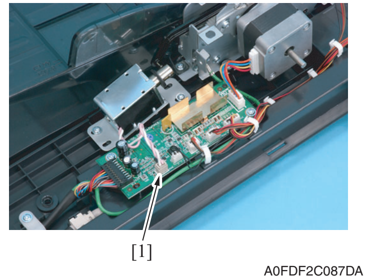


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3. Remove two screws [1] and spring [2], and remove the transport motor [3].

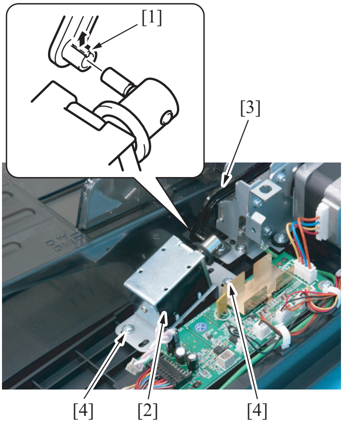
3.3.9 Retraction solenoid (SD1)

1. Remove the ADF cover.
See P.10



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2. Disconnect the connector (PA6) [1] from the DF control board.

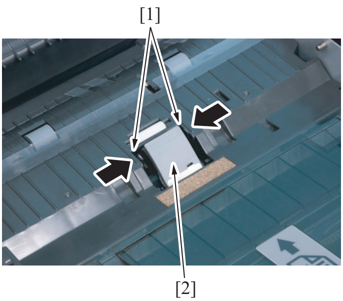


A0FDF2C088DA

3. Pushing the tab [1] in the direction of the arrow to unhook it, remove the lever [3] from the retraction solenoid [2].
4. Remove two screws [4], and remove the retraction solenoid [2].

3.3.10 Separator pad

1. Open the top cover.



A0FDF2C069DA

2. Remove two tabs [1], and remove the separator pad [2].

NOTE

- **Be extremely careful not to lose the spring on the separator pad.**

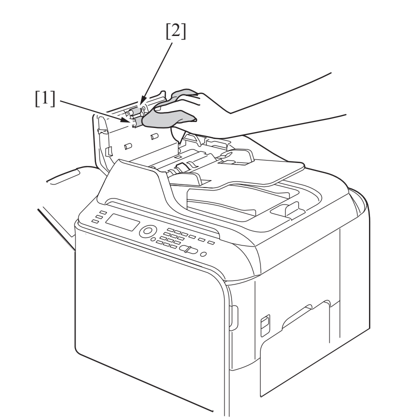
3.4 Cleaning procedure

NOTE

- **The alcohol described in the cleaning procedure is isopropyl alcohol.**

3.4.1 Paper feed roller / pick-up roller

1. Open the top cover.

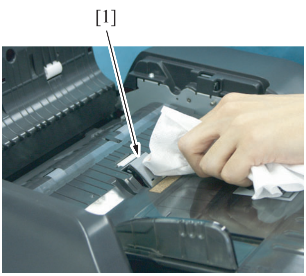


A0FDF2C554DA

2. Wipe the paper feed roller [1] and pick-up roller [2] clean of dirt using a soft cloth dampened with alcohol.

3.4.2 Separator pad

1. Open the top cover.



A0FDF2C556DA

2. Wipe the separator pad [1] clean of dirt using a soft cloth dampened with alcohol.

Adjustment/Setting

4. How to use the adjustment section

- "Adjustment/Setting" contains detailed information on the adjustment items and procedures for this machine.
- Throughout this "Adjustment/Setting," the default settings are indicated by " ".

Advance checks

Before attempting to solve the customer problem, the following advance checks must be made. Check to see if:

- The power supply voltage meets the specifications.
- The power supply is properly grounded.
- The machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that generate electric noise).
- The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
- The original has a problem that may cause a defective image.
- The density is properly selected.
- The original glass, slit glass, or related part is dirty.
- Correct paper is being used for printing.
- The units, parts, and supplies used for printing (developer, PC drum, etc.) are properly replenished and replaced when they reach the end of their useful service life.
- Toner is not running out.

⚠ **CAUTION**

- **Be sure to unplug the power cord of the machine before starting the service job procedures.**
- **If it is unavoidably necessary to service the machine with its power turned ON, use utmost care not to be caught in the scanner cables or gears of the exposure unit.**
- **Special care should be used when handling the fusing unit which can be extremely hot.**
- **The developing unit has a strong magnetic field. Keep watches and measuring instruments away from it.**
- **Take care not to damage the PC drum with a tool or similar device.**
- **Do not touch IC pins with bare hands.**

5. SERVICE MODE

5.1 SERVICE MODE entry procedure

NOTE
- **Ensure appropriate security for the Service Mode entry procedure. It should NEVER be given to any unauthorized person.**

A. Procedure

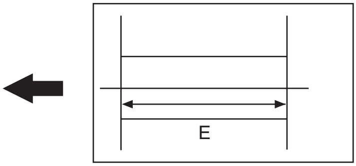
1. On the initial screen, press the Select key to call [PAPER SELECT] to the screen.
2. Press the following keys in this order.
Stop/Reset → 0 → 0 → Stop/Reset → 0 → 1

B. Exiting

- Press the Stop/Reset key.

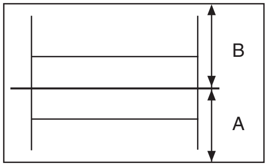
5.2 ADJUST

5.2.1 ADF 1ST SUB ZOOM

Function	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning zoom ratio in the sub-scanning direction (1-side) when using the Automatic Document Feeder.
Use	• When the original glass is replaced. • When a new Auto Document Feeder Unit is mounted **NOTE** • **After the [CCD SUB ZOOM] adjustments have been performed**
Adjustment Specification	• Adjust the length of E in the copy of the test pattern so that the following specification is met. • 200 ± 0.5 % (Zoom Ratio = Full Size: 100 %)  4139F3C549DA
Adjustment Range	• -2.0% ~ “0%” ~ +2.0% • Step: 0.4%
Setting/ Procedure	*1.* Print the test pattern1. See P.216 of the main body service manual. *2.* Enter the [ADJUST] menu in the service mode. *3.* Select [ADF 1ST SUB ZOOM], and press the Select key. *4.* Place test pattern 1 in the ADF with its printed surface up. *5.* Select [TEST COPY] and press the Select key to make a test copy. **NOTE** • **The test pattern1 should be positioned vertically.** • **Use A4 or Letter paper loaded into tray1 to make the test copy.** *6.* Check that the width of E in the copy of the test pattern1 meets the specification. Calculation: (1 - Width of E in the document ÷ Width of E in the copy) × 100 If the width of E is out of specification, adjust it according to the following procedure. *7.* Select [ADJUST], and press the Select key. *8.* Using the ▲/▼ key, change the setting value and then press the Select key. *9.* Place the test pattern1 into the Automatic Document Feeder. Then, make a test copy again and check it.
Adjustment Instructions	• If the width of E in the test pattern is longer than the specified width ..... Decrease the setting. • If the width of E in the test pattern is shorter than the specified width ..... Increase the setting.

5.2.2 ADF 1ST MAIN REG

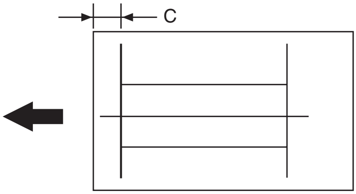
<table>
<tr><td>Function</td><td>• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the main scanning direction (1-side) when using the Automatic Document Feeder.</td></tr>
<tr><td>Use</td><td>• When the original glass is replaced.
• When a new Auto Document Feeder Unit is mounted

NOTE
• After the [CCD SUB ZOOM] adjustments have been performed
• After the [ADF 1ST SUB ZOOM] adjustments have been performed</td></tr>
<tr><td>Adjustment Specification</td><td>• Adjust the amount that widths A and B in the copy of the test pattern1 so that the following specification is met.
• 0 ± 2.0 mm


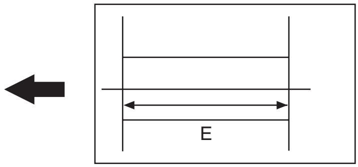
4139F3C546DA</td></tr>
<tr><td>Adjustment Range</td><td>• -5.0 (-5.0 mm) ~ “0.0 (0.0 mm)” ~ +5.0 (+5.0 mm)
• Step: 0.5 mm</td></tr>
<tr><td>Setting/ Procedure</td><td>1. Print the test pattern1.
See P.216 of the main body service manual.
2. Enter the [ADJUST] menu in the service mode.
3. Select [ADF 1ST MAIN REG], and press the Select key.
4. Place test pattern 1 in the ADF with its printed surface up.
5. Select [TEST COPY] and press the Select key to make a test copy.
NOTE
• The test pattern1 should be positioned vertically.
• Use A4 or Letter paper loaded into tray1 to make the test copy.

6. Check the amount that widths A and B in the copy of the test pattern are shifted. If the shift is out of specification, adjust it according to the following procedure.
7. Select [ADJUST], and press the Select key.
8. Using the ▲/▼ key, change the setting value and then press the Select key.
9. Place the test pattern1 into the Automatic Document Feeder. Then, make a test copy again and check it.</td></tr>
<tr><td>Adjustment Instructions</td><td>• If the width of A is less than the width of B..... Increase the setting.
• If the width of B is less than the width of A..... Decrease the setting.</td></tr>
</table>

5.2.3 ADF 1ST SUB REG

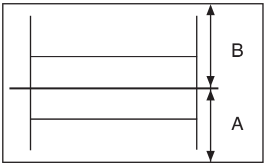
Function	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the sub-scanning direction (1-side) when using the Automatic Document Feeder.
Use	• When the original glass is replaced. • When a new Auto Document Feeder Unit is mounted **NOTE** • **After the [CCD SUB ZOOM] adjustments have been performed** • **After the [ADF 1ST SUB ZOOM] adjustments have been performed**
Adjustment Specification	• Adjust the width of C in the copy of the test pattern1 so that the following specification is met. • 20 ± 2.5 mm  4139F3C547DA
Adjustment Range	• -5.0 (-5.0 mm) ~ "0 (0 mm)" ~ +5.0 (+5.0 mm) • Step: 0.5 mm
Setting/ Procedure	*1.* Print the test pattern1. See P.216 of the main body service manual. *2.* Enter the [ADJUST] menu in the service mode. *3.* Select [ADF 1ST SUB REG], and press the Select key. *4.* Place test pattern 1 in the ADF with its printed surface up. *5.* Select [TEST COPY] and press the Select key to make a test copy. **NOTE** • **The test pattern1 should be positioned vertically.** • **Use A4 or Letter paper loaded into tray1 to make the test copy.** *6.* Check that the width of C in the copy of the test pattern are shifted. If the width of C is out of specification, adjust it according to the following procedure. *7.* Select [ADJUST], and press the Select key. *8.* Using the ▲/▼ key, change the setting value and then press the Select key. *9.* Place the test pattern1 into the Automatic Document Feeder. Then, make a test copy again and check it.
Adjustment Instructions	• If the width of C in the test pattern is longer than the specified width ..... Increase the setting. • If the width of C in the test pattern is shorter than the specified width ..... Decrease the setting.

5.2.4 ADF 2ND SUB ZOOM

Function	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning zoom ratio in the sub-scanning direction (2-side) when using the Automatic Document Feeder.
Use	• When the original glass is replaced. • When a new Auto Document Feeder Unit is mounted **NOTE** • **After the [CCD SUB ZOOM] adjustments have been performed**
Adjustment Specification	• Adjust the length of E in the copy of the test pattern so that the following specification is met. • 200 ± 0.5 % (Zoom Ratio = Full Size: 100 %) 
Adjustment Range	• -2.0% ~ “0%” ~ +2.0% • Step: 0.4%
Setting/ Procedure	1. Print the test pattern1. See P.216 of the main body service manual. 2. Enter the [ADJUST] menu in the service mode. 3. Select [ADF 2ND SUB ZOOM], and press the Select key. 4. Place test pattern 1 in the ADF with its printed surface down. 5. Select [TEST COPY] and press the Select key to make a test copy. **NOTE** • **The test pattern1 should be positioned vertically.** • **Use A4 or Letter paper loaded into tray1 to make the test copy.** 6. Check that the width of E in the copy of the test pattern1 meets the specification. Calculation: (1 - Width of E in the document ÷ Width of E in the copy) × 100 If the width of E is out of specification, adjust it according to the following procedure. 7. Select [ADJUST], and press the Select key. 8. Using the ▲/▼ key, change the setting value and then press the Select key. 9. Place the test pattern1 into the Automatic Document Feeder. Then, make a test copy again and check it.
Adjustment Instructions	• If the width of E in the test pattern is longer than the specified width ..... Decrease the setting. • If the width of E in the test pattern is shorter than the specified width ..... Increase the setting.

5.2.5 ADF 2ND MAIN REG

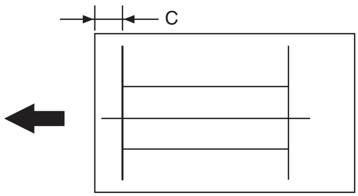
<table>
<tr><td>Function</td><td>• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the main scanning direction (2-side) when using the Automatic Document Feeder.</td></tr>
<tr><td>Use</td><td>• When the original glass is replaced.
• When a new Auto Document Feeder Unit is mounted

NOTE
• After the [CCD SUB ZOOM] adjustments have been performed
• After the [ADF 1ST SUB ZOOM] adjustments have been performed</td></tr>
<tr><td>Adjustment Specification</td><td>• Adjust the amount that widths A and B in the copy of the test pattern1 so that the following specification is met.
• 0 ± 2.0 mm


4139F3C546DA</td></tr>
<tr><td>Adjustment Range</td><td>• -5.0 (-5.0 mm) ~ “0.0 (0.0 mm)” ~ +5.0 (+5.0 mm)
• Step: 0.5 mm</td></tr>
<tr><td>Setting/ Procedure</td><td>1. Print the test pattern1.
See P.216 of the main body service manual.
2. Enter the [ADJUST] menu in the service mode.
3. Select [ADF 2ND MAIN REG], and press the Select key.
4. Place test pattern 1 in the ADF with its printed surface down.
5. Select [TEST COPY] and press the Select key to make a test copy.
NOTE
• The test pattern1 should be positioned vertically.
• Use A4 or Letter paper loaded into tray1 to make the test copy.

6. Check the amount that widths A and B in the copy of the test pattern are shifted. If the shift is out of specification, adjust it according to the following procedure.
7. Select [ADJUST], and press the Select key.
8. Using the ▲/▼ key, change the setting value and then press the Select key.
9. Place the test pattern1 into the Automatic Document Feeder. Then, make a test copy again and check it.</td></tr>
<tr><td>Adjustment Instructions</td><td>• If the width of A is less than the width of B..... Increase the setting.
• If the width of B is less than the width of A..... Decrease the setting.</td></tr>
</table>

5.2.6 ADF 2ND SUB REG

Function	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the sub-scanning direction (2-side) when using the Automatic Document Feeder.
Use	• When the original glass is replaced. • When a new Auto Document Feeder Unit is mounted **NOTE** • **After the [CCD SUB ZOOM] adjustments have been performed** • **After the [ADF 1ST SUB ZOOM] adjustments have been performed**
Adjustment Specification	• Adjust the width of C in the copy of the test pattern1 so that the following specification is met. • 20 ± 3.0 mm  4139F3C547DA
Adjustment Range	• -5.0 (-5.0 mm) ~ “0 (0 mm)” ~ +5.0 (+5.0 mm) • Step: 0.5 mm
Setting/ Procedure	*1.* Print the test pattern1. See P.216 of the main body service manual. *2.* Enter the [ADJUST] menu in the service mode. *3.* Select [ADF 2ND SUB REG], and press the Select key. *4.* Place test pattern 1 in the ADF with its printed surface down. *5.* Select [TEST COPY] and press the Select key to make a test copy. **NOTE** • **The test pattern1 should be positioned vertically.** • **Use A4 or Letter paper loaded into tray1 to make the test copy.** *6.* Check that the width of C in the copy of the test pattern are shifted. If the width of C is out of specification, adjust it according to the following procedure. *7.* Select [ADJUST], and press the Select key. *8.* Using the ▲/▼ key, change the setting value and then press the Select key. *9.* Place the test pattern1 into the Automatic Document Feeder. Then, make a test copy again and check it.
Adjustment Instructions	• If the width of C in the test pattern is longer than the specified width ..... Increase the setting. • If the width of C in the test pattern is shorter than the specified width ..... Decrease the setting.

5.2.7 ADF LOOP

Function	• To adjust the length of the loop to be formed in paper before the registration rollers.
Use	• When an original misfeed or skew occurs.
Adjustment Instructions	• The loop value increases by the entered + value and decreases by the entered - value.
Adjustment Range	• The default setting is 0. • -5.0 (-5.0 mm) ~ “0 (0 mm)” ~ +5.0 (+5.0 mm) • Step: 0.5 mm
Setting/ procedure	*1.* Enter the [ADJUST] menu in the service mode. *2.* Select [ADF LOOP] and press the Select key. *3.* Select [ADJUST] and press the Select key. *4.* Using the ▲/▼ key, change the setting value and then press the Select key.

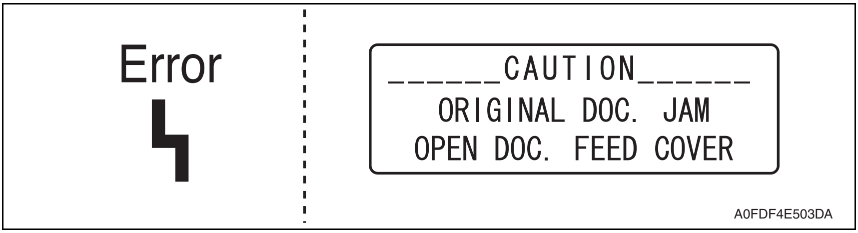
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Troubleshooting

6. Jam display

6.1 Misfeed display

- When a media misfeed occurs, the printer shows the corresponding media misfeed status by means of the Error indicator on the control panel or LCD display.

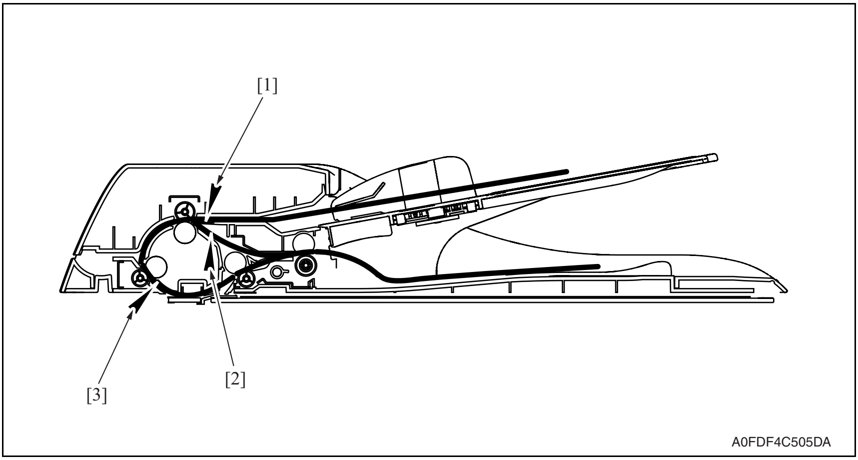


Display	Misfeed Location	Misfeed processing location	Action
ORIGINAL DOC. JAM OPEN DOC. FEED COVER	Document feeding section	Top cover	P.28
	Document transport section		P.29
	Document exit section		P.30

6.1.1 Misfeed display resetting procedure

- Open the corresponding cover, clear the sheet of paper misfeed, and close the cover.

6.2 Sensor layout



[1] Media feed sensor (on REYB1)

[2] Exit sensor (on REYB2)

[3] Registration sensor (on REYB2)

6.3 Solution

6.3.1 Initial check items

- When a media misfeed occurs, check the following:

Check item	Action
Does the media meet product specifications?	Change the media.
Is the media curled, wavy, or damp.	Change the media. Instruct the user in correct media storage.
Is a foreign object present along the media path, or is the media path deformed or worn?	Clean or change the media path.
Are the rolls/rollers dirty, deformed, or worn?	Clean or change the defective roll/roller.
Are the edge guide and trailing edge stop at the correct position to accommodate paper?	Set as necessary.
Are the actuators operational?	Correct or change the defective actuator.

6.3.2 Misfeed at the document feeding section

A. Detection timing

Type	Description
Detection of misfeed at the document feeding section	The media feed sensor (on REYB1) is not unblocked even after the lapse of a predetermined period of time after the transport motor (M1) has been energized.
Detection of paper left at the document feeding section	The media feed sensor (on REYB1) is unblocked when the power switch is turned ON, the cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant electrical parts	
Transport motor (M1) Media feed sensor (on REYB1)	DF control board (DFCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items.	—	—
2	Check the DFCB connector for proper connection and correct as necessary.	—	—
3	M1 operation check.	DFCB PA7-1 to 4	G-3
4	Media feed sensor sensor check.	DFCB PA3-1 (ON)	B-4
5	Change DFCB.	—	—

6.3.3 Misfeed at the document transport section

A. Detection timing

Type	Description
Detection of misfeed at the document transport section	The registration sensor (on REYB2) is not blocked even after the lapse of a predetermined period of time after the media feed sensor (on REYB1) has been unblocked.
Detection of paper left at the document transport section	The media feed sensor (on REYB1) is unblocked and the registration sensor (on REYB2) is blocked when the power switch is turned ON, the cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant electrical parts	
Transport motor (M1) Media feed sensor (on REYB1) Registration sensor (on REYB2)	DF control board (DFCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items.	—	—
2	Check the DFCB connector for proper connection and correct as necessary.	—	—
3	M1 operation check.	DFCB PA7-1 to 4	G-3
4	Media feed sensor sensor check.	DFCB PA3-1 (ON)	B-4
5	Registration sensor sensor check.	DFCB PA1-2 (ON)	B-3
6	Change DFCB.	—	—

6.3.4 Misfeed at the document exit section

A. Detection timing

Type	Description
Detection of misfeed at the document exit section	The exit sensor (on REYB2) is not unblocked even after the lapse of a predetermined period of time after the exit sensor (on REYB2) has been blocked.
Detection of paper left at the document exit section	The exit sensor (on REYB2) is blocked when the power switch is turned ON, the cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant electrical parts	
Exit sensor (on REYB2)	DF control board (DFCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items.	—	—
2	Check the DFCB connector for proper connection and correct as necessary.	—	—
3	Exit sensor sensor check.	DFCB PA1-3 (ON)	B-3
4	Change DFCB.	—	—

KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

Lower Feeder Unit

2008.09

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

Revision history

After publication of this service manual, the parts and mechanism may be subject to change for improvement of their performance.
Therefore, the descriptions given in this service manual may not coincide with the actual machine.

When any change has been made to the descriptions in the service manual, a revised version will be issued with a revision mark added as required.

Revision mark:

- To indicate clearly a section revised, ⚠1 is shown at the left margin of the revised section.
  The number inside ⚠1 represents the number of times the revision has been made.

- To indicate clearly a page that contains the revision, ▲1 is shown near the page number of the corresponding page.
  The number inside ▲1 represents the number of times the revision has been made.

NOTE

Revision marks shown in a page are restricted only to the latest ones with the old ones deleted.

- When a page revised in Ver. 2.0 has been changed in Ver. 3.0:
  The revision marks for Ver. 3.0 only are shown with those for Ver. 2.0 deleted.
- When a page revised in Ver. 2.0 has not been changed in Ver. 3.0:
  The revision marks for Ver. 2.0 are left as they are.

2008/09	1.0	—	Issue of the first edition
Date	Service manual Ver.	Revision mark	Descriptions of revision

CONTENTS

Lower Feeder Unit

Outline

Maintenance

Adjustment/Setting

Troubleshooting

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Outline

1. Product specifications

A. Type

Name	Add-on 500-sheet media feed cassette
Type	Front-loading type
Installation	Desk type
Media feeding system	Media separation by a small-diameter roller with torque limiter
Document alignment	Center

B. Media type

Media size	B5S(JIS)/Executive/LetterS/A4S/Letter Plus/G-Legal/Legal
Media type	• Plain paper: 60 to 90 g/m^2 (16 to 24 lb) • Recycled paper: 60 to 90 g/m^2 (16 to 24 lb)
Capacity	500 sheets

C. Machine specifications

Power Requirements	DC 24 V ± 10% (supplied from the main body)
	DC 5 V ± 5%
Max. Power Consumption	16 W
Dimensions	539 mm (W) × 590 mm (D) × 111 mm (H) 21.2 inch (W) × 28.2 inch (D) × 4.4 inch (H)
Weight	Approx. 7.0 kg (15.5 lb)

D. Operating environment

Temperature	10° to 35° C/50° to 95° F (with a fluctuation of 10° C/h (18° F/h))
Humidity	15% to 85% (with a fluctuation of 20%/h)

NOTE

- **These specifications are subject to change without notice.**

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Maintenance

2. Periodic check

2.1 Maintenance procedure (periodic parts check)

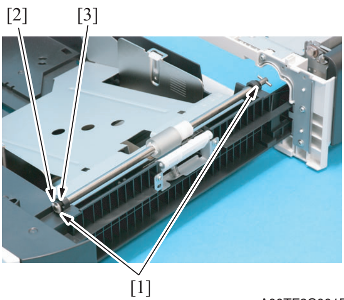
2.1.1 Replacing the feed roller

A. Periodically replaced parts/cycle

- Feed roller: Every 300,000 prints

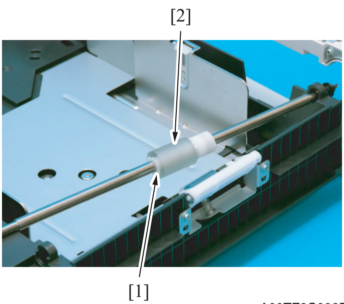
B. Procedure

1. Slide out tray 1.
2. Lock the media lift plate.



A00TF2C001DA

3. Remove two C-rings [1] and remove the washer [2], and the bearing [3] at the front.



A00TF2C002DA

4. Remove the C-ring [1], and remove the feed roller [2].

3. Other

3.1 Disassembly/adjustment prohibited items

A. Paint-locked screws

NOTE

- **To prevent loose screws, a screw lock in blue or green series color is applied to the screws.**
- **The screw lock is applied to the screws that may get loose due to the vibrations and loads created by the use of machine or due to the vibrations created during transportation.**
- **If the screw lock coated screws are loosened or removed, be sure to apply a screw lock after the screws are tightened.**

B. Red-painted screws

NOTE

- **The screws which are difficult to be adjusted in the field are painted in red in order to prevent them from being removed by mistake.**
- **Do not remove or loosen any of the red-painted screws in the field. It should also be noted that, when two or more screws are used for a single part, only one representative screw may be marked with the red paint.**

C. Variable resistors on board

NOTE

- **Do not turn the variable resistors on boards for which no adjusting instructions are given in Adjustment/Setting.**

D. Removal of PWBs

⚠ CAUTION

- **When removing a circuit board or other electrical component, refer to "Handling of PWBs" and follow the corresponding removal procedures.**
- **The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.**
- **Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.**

3.2 Disassembly/assembly list (other parts)

A. Disassembly/assembly parts list

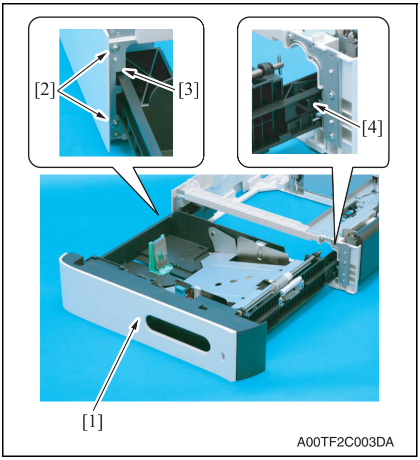
No	Section	Part name	Ref. page
1	Exterior parts	Tray	P.6
2	Board and etc.	PC control board (PCCB)	P.6
3	Others	Media feed clutch (CL1)	P.8
4		Transport motor (M1)	P.10

B. Cleaning parts list

No	Section	Part name	Ref. page
1	Media feed section	Feed roller	P.11

3.3 Disassembly/assembly procedure

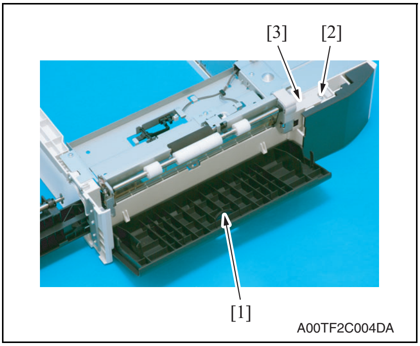
3.3.1 Tray



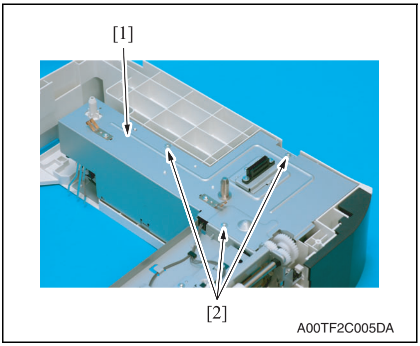
1. Slide out the tray [1].
2. Remove two screws [2], and remove the stopper [3].
3. Pressing the tab [4], remove the tray [1].

3.3.2 PC control board (PCCB)

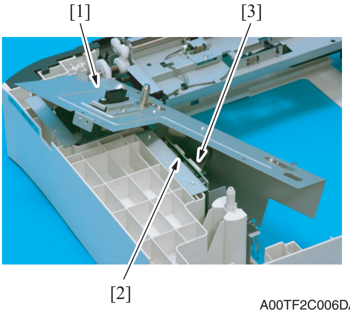
1. Remove the lower feeder unit from the machine.
2. Slide out the tray.



3. Open the lower feeder unit right door [1].
4. Remove the screw [2], and remove the gear cover [3].

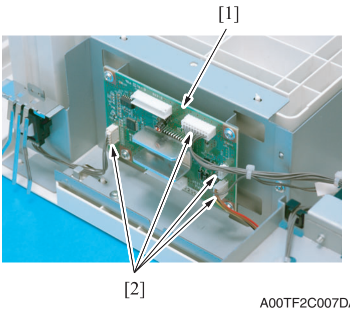


5. Remove three screws [2] from the PC control board protective cover [1].



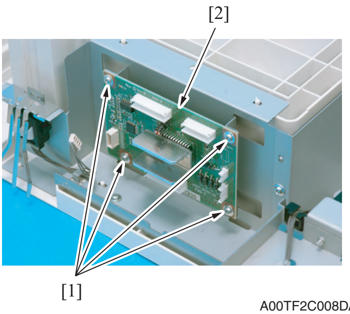
A00TF2C006DA

6. Slightly raise the PC control board protective cover [1] and, at the same time, disconnect the connector [3] from the PC control board [2].
7. Remove the PC control board protective cover [1].



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8. Disconnect all connectors [2] from the PC control board [1].

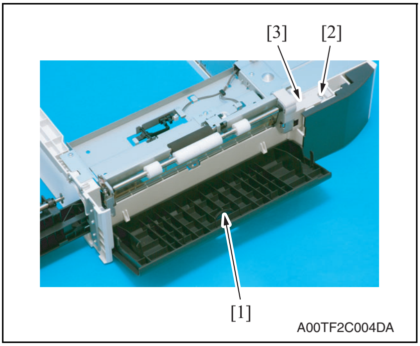


A00TF2C008DA

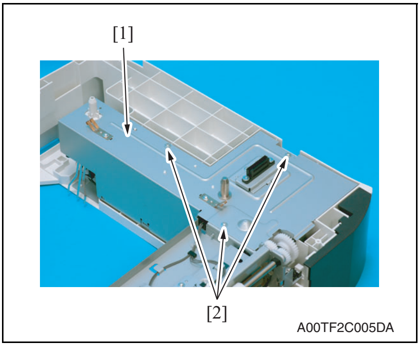
9. Remove four screws [1], and remove the PC control board [2].

3.3.3 Media feed clutch (CL1)

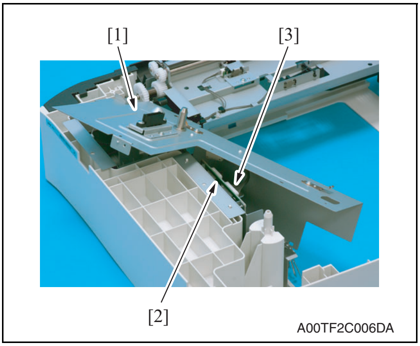
1. Remove the lower feeder unit from the machine.
2. Slide out the tray.



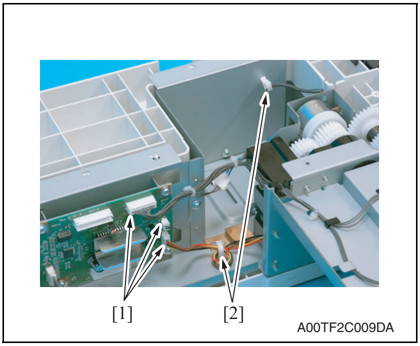
3. Open the lower feeder unit right door [1].
4. Remove the screw [2], and remove the gear cover [3].



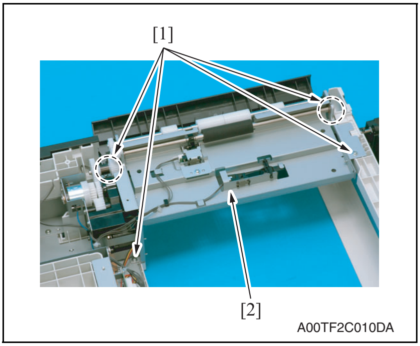
5. Remove three screws [2] from the PC control board protective cover [1].



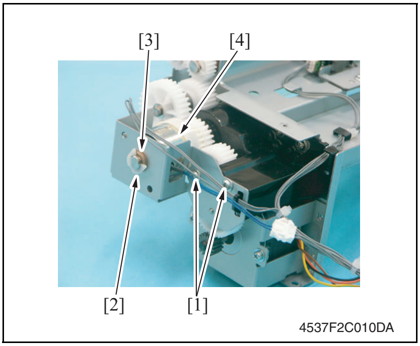
6. Slightly raise the PC control board protective cover [1] and, at the same time, disconnect the connector [3] from the PC control board [2].
7. Remove the PC control board protective cover [1].



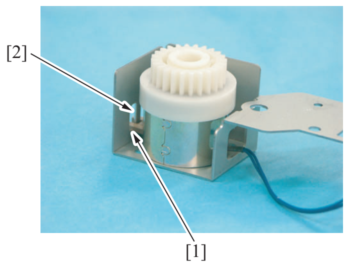
8. Disconnect three connectors [1], and remove the harness from two wire saddles [2].



9. Remove four screws [1], and remove the media feed drive assy [2].



10. Remove two screws [1], remove the C-ring [2] and bearing [3], and remove the media feed clutch [4].



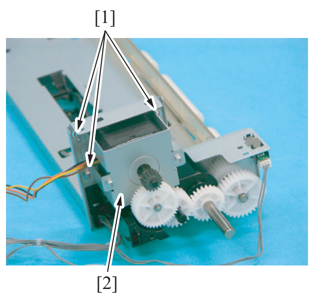
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NOTE

- **When reinstalling the media feed clutch, make sure that the protrusion [1] on the media feed clutch fits into the locking slot [2].**

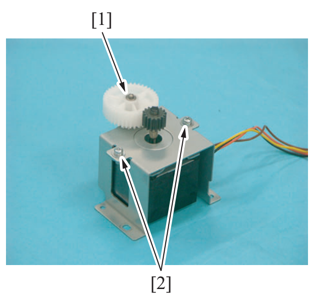
3.3.4 Transport motor (M1)

1. Remove the media feed drive assy and media feed clutch.
   See P.8



A00TF2C011DA

2. Remove three screws [1], and remove the transport motor assy [2].



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3. Remove the gear [1].
4. Remove two screws [2], and remove the transport motor.

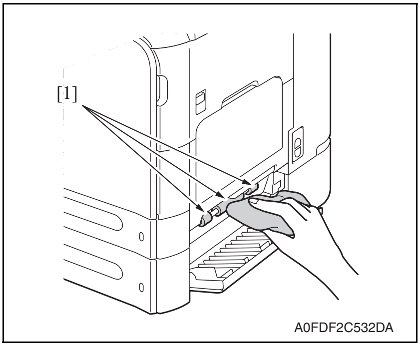
3.4 Cleaning procedure

NOTE

- **The alcohol used in this cleaning procedure is isopropyl alcohol.**

3.4.1 Feed roller

1. Open the lower feeder unit right door.



2. Wipe the feed roller [1] clean of dirt using a cleaning pad dampened with alcohol.

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Adjustment/Setting

4. How to use the adjustment section

- "Adjustment/Setting" contains detailed information on the adjustment items and procedures for this machine.
- Throughout this "Adjustment/Setting," the default settings are indicated by " ".

Advance checks
Before attempting to solve the customer problem, the following advance checks must be made. Check to see if:

- The power supply voltage meets the specifications.
- The power supply is properly grounded.
- The machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that generate electric noise).
- The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
- The original has a problem that may cause a defective image.
- The density is properly selected.
- The original glass, slit glass, or related part is dirty.
- Correct media is being used for printing.
- The units, parts, and supplies used for printing (developer, PC drum, etc.) are properly replenished and replaced when they reach the end of their useful service life.
- Toner is not running out.

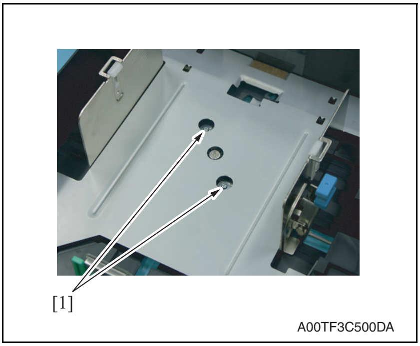
⚠ **CAUTION**
- **To unplug the power cord of the machine before starting the service job procedures.**
- **If it is unavoidably necessary to service the machine with its power turned ON, use utmost care not to be caught in the scanner cables or gears of the exposure unit.**
- **Special care should be used when handling the fuser unit which can be extremely hot.**
- **The developing unit has a strong magnetic field. Keep watches and measuring instruments away from it.**
- **Take care not to damage the PC drum with a tool or similar device.**
- **Do not touch IC pins with bare hands.**

5. Mechanical adjustment

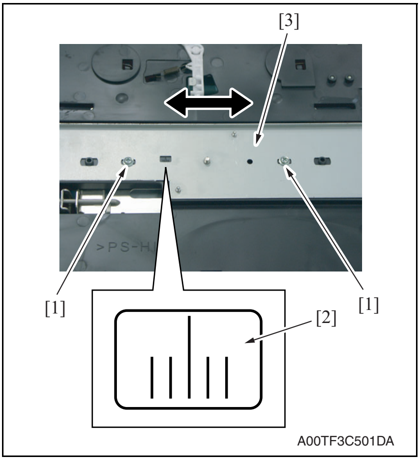
5.1 Registration adjustment

This adjustment must be made if:
- **The printed image deviates in the CD direction.**

1. Remove the tray.
See P.6



2. Loosen two screws [1].



3. Loosen two screws [1].
4. Watching the graduations [2] on the adjusting plate, move the edge guide plate [3] as necessary.

Adjustment range: ± **2.0 mm**

5. Tighten the four screws that have been loosened and mount the tray.

Troubleshooting

6. Jam display

6.1 Misfeed display

- When a media misfeed occurs, a message is displayed on the control panel.



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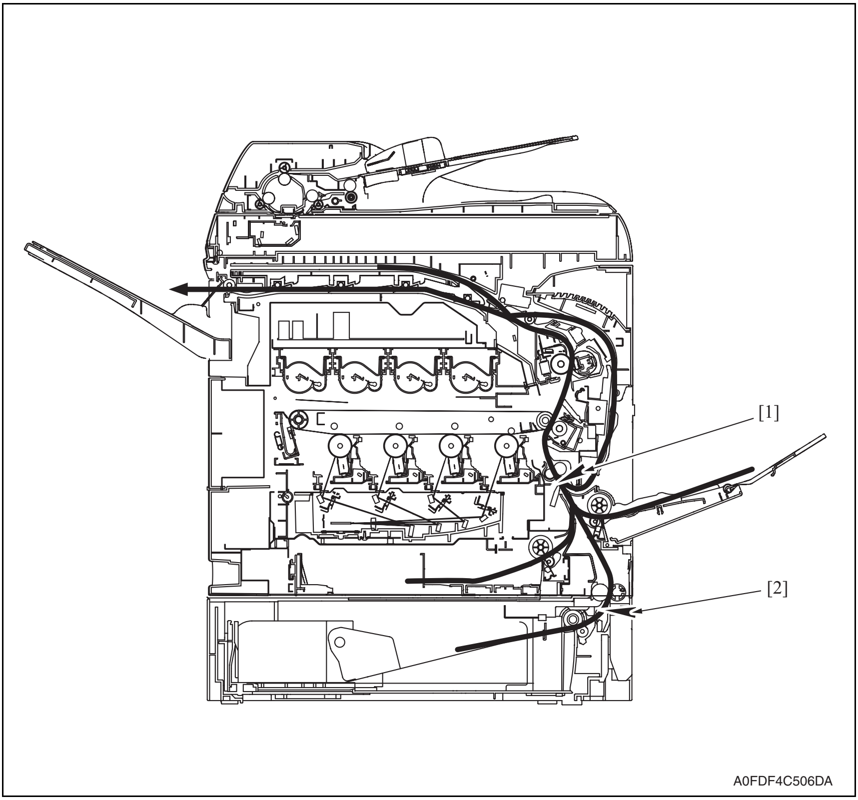
Display	Misfeed location	Misfeed clearing location	Ref. page
VERTICAL TRANS JAM OPEN RIGHT DOOR	• Tray 3 media feed section	Tray 3	P.18
	• Vertical transport section	Tray 3 right side cover	P.19

6.2 Misfeed display resetting procedure

- Open the relevant cover, clear the sheet of misfed media, and close the cover.

6.3 Sensor layout

- For a system equipped with a lower feeder unit.



[1] Registration sensor (PS4)

[2] Media feed sensor (PS3)

6.4 Solution

6.4.1 Initial check items

- When a media misfeed occurs, first check the following initial check items.

Check Item	Action
Does the media meet product specifications?	Change the media.
Is the media curled, wavy, or damp.	Change the media. Instruct the user in correct media storage requirements.
Is a foreign object present along the media path, or is the media path deformed or worn?	Clean or change the media path.
Are the rolls/rollers dirty, deformed, or worn?	Clean or change the defective roll/roller.
Are the Edge Guide and Trailing Edge Stop at the correct position to accommodate media?	Set as necessary.
Are the actuators found operational as checked for correct operation?	Correct or change the defective actuator.

6.4.2 Misfeed at the tray 3 media feed section

A. Detection timing

Type	Description
Detection of mis-feed at tray 3 media feed section	The media does not block the media feed sensor (PS3) even after the lapse of a given period of time after the media feed clutch (CL1) has turned ON.
Detection of media left at tray 3 media feed section	The media feed sensor (PS3) is not blocked when the main power switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant electrical parts	
Media feed sensor (PS3) Media feed clutch (CL1) Transport motor (M1)	PC control board (PCCB) MFP board/1 (MFPB/1)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Initial check items	—	—
2	PS3 sensor check	PCCB PJ5-6 (ON)	B-4
3	CL1 operation check	PCCB PJ6-2 (REM)	B-5
4	M1 operation check	PCCB PJ3-1 to 4	B-5
5	Change PCCB.	—	—
6	Change MFPB/1.	—	—

6.4.3 Misfeed at the tray 3 vertical transport section

A. Detection timing

Type	Description
Detection of misfeed at tray 3 vertical transport section	The media does not block the registration sensor (PS4) even after the lapse of a given period of time after it has blocked the media feed sensor (PS3).
	The media does not unblock the media feed sensor (PS3) even after the lapse of a given period of time after it has blocked the media feed sensor (PS3).

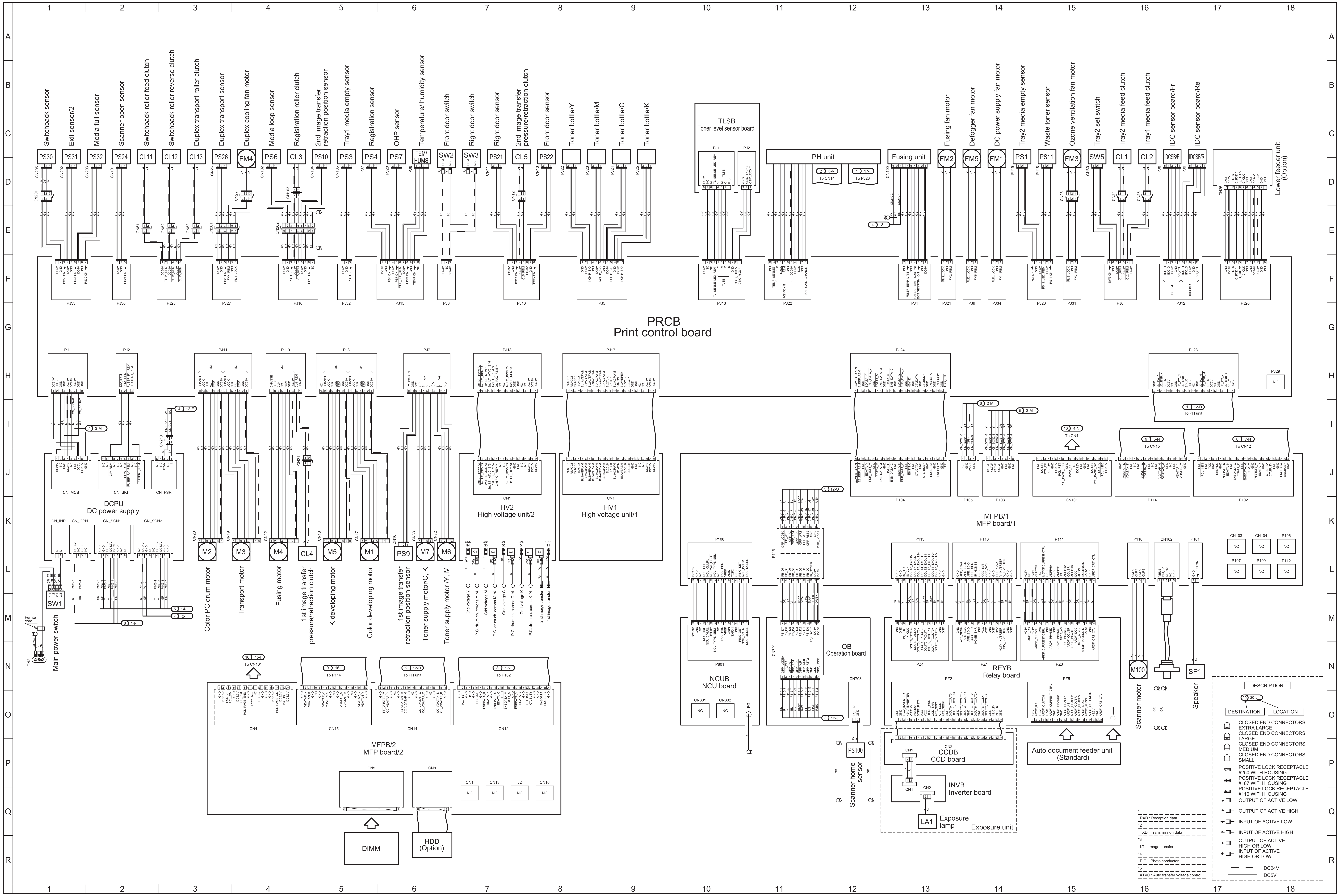
B. Action

Relevant electrical parts	
Media feed sensor (PS3) Registration sensor (PS4) Transport motor (M1)	PC control board (PCCB) MFP board/1 (MFPB/1)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Initial check items	—	—
2	PS3 sensor check	PCCB PJ5-6 (ON)	B-4
3	PS4 sensor check	PRCB PJ15-3 (ON)	bizhub C20 C to D-5
4	M1 operation check	PCCB PJ3-1 to 4	B-5
5	Change PCCB.	—	—
6	Change MFPB/1.	—	—

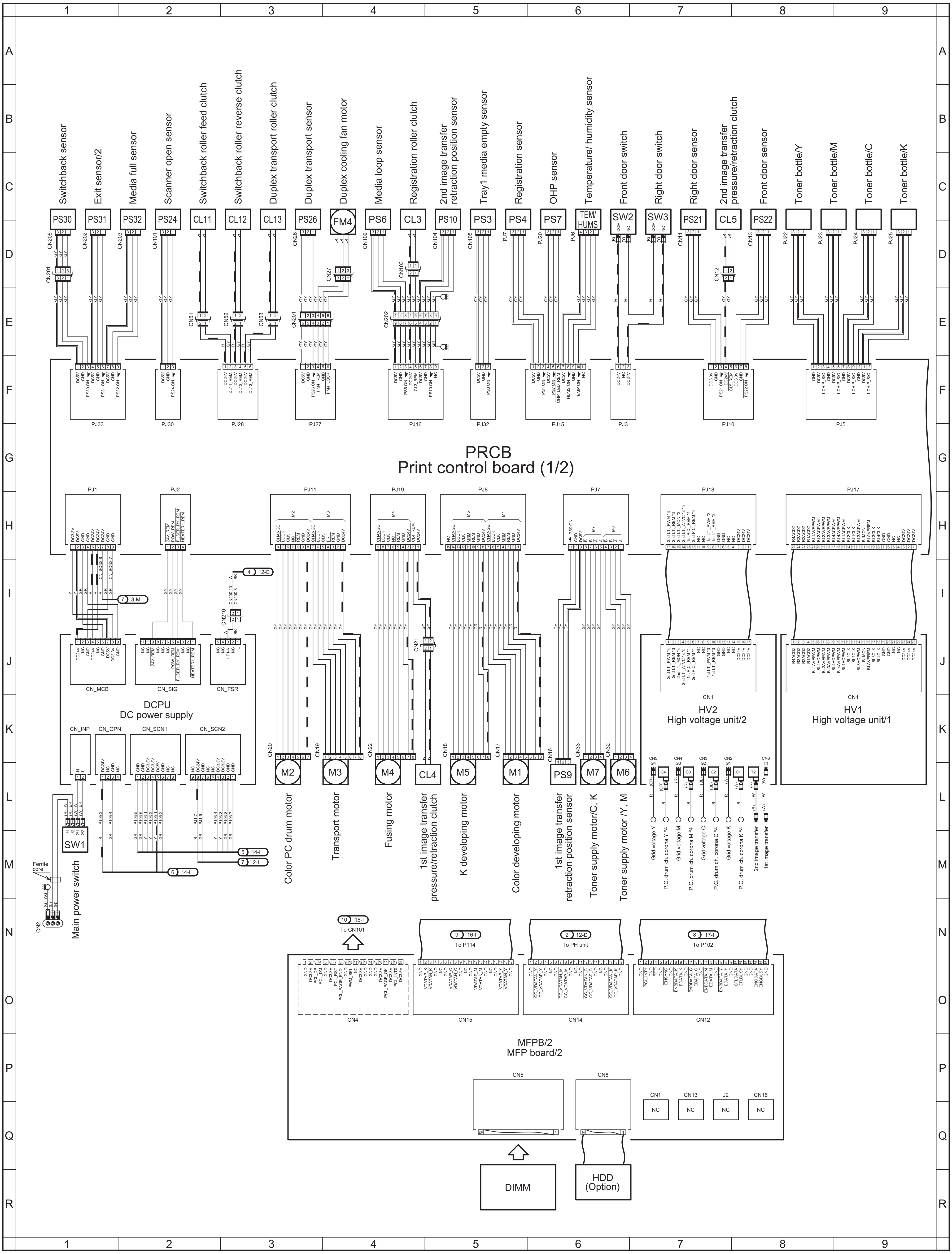
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bizhub C20 Overall wiring diagram



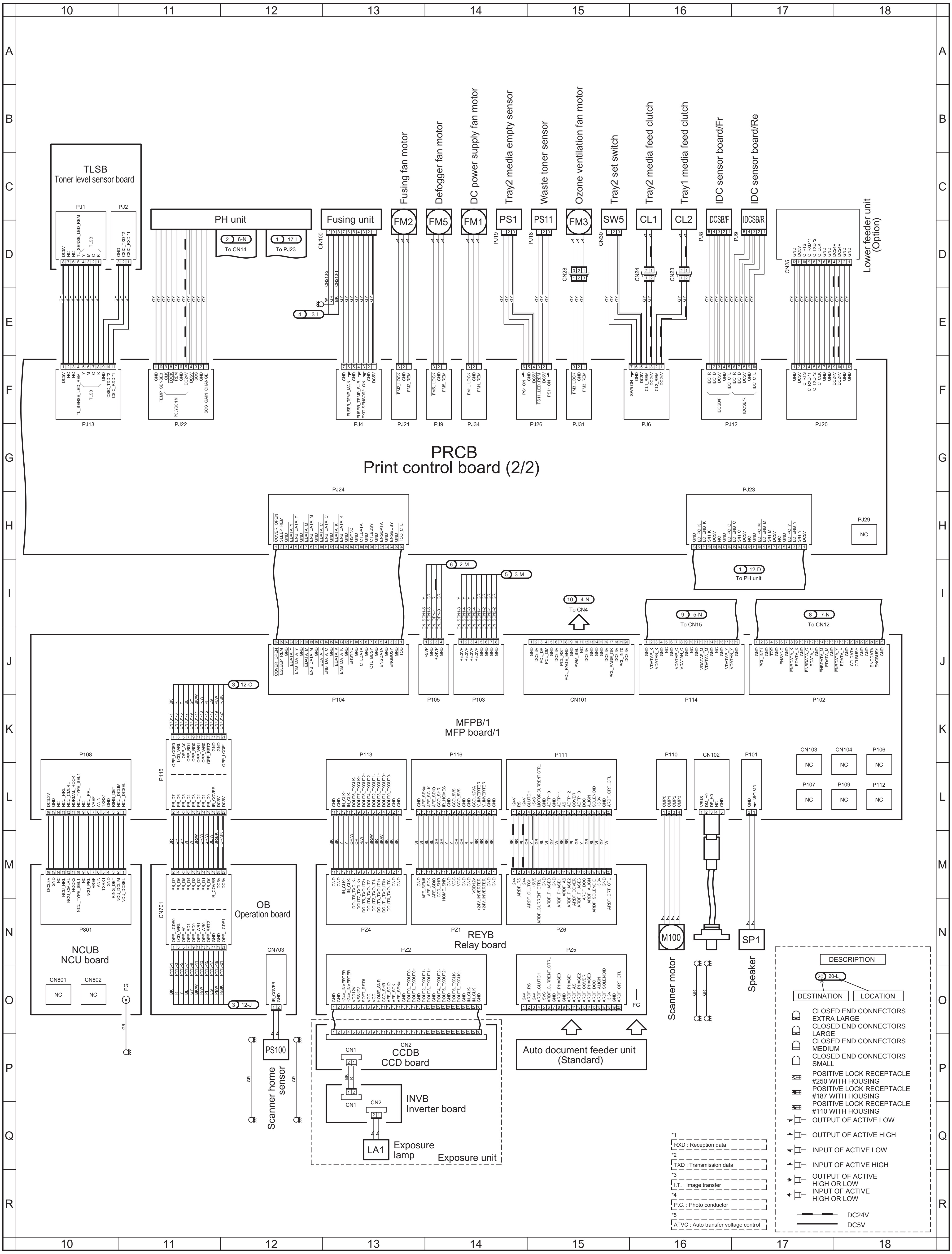
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Aug.2008

bizhub C20 Overall wiring diagram 1/2



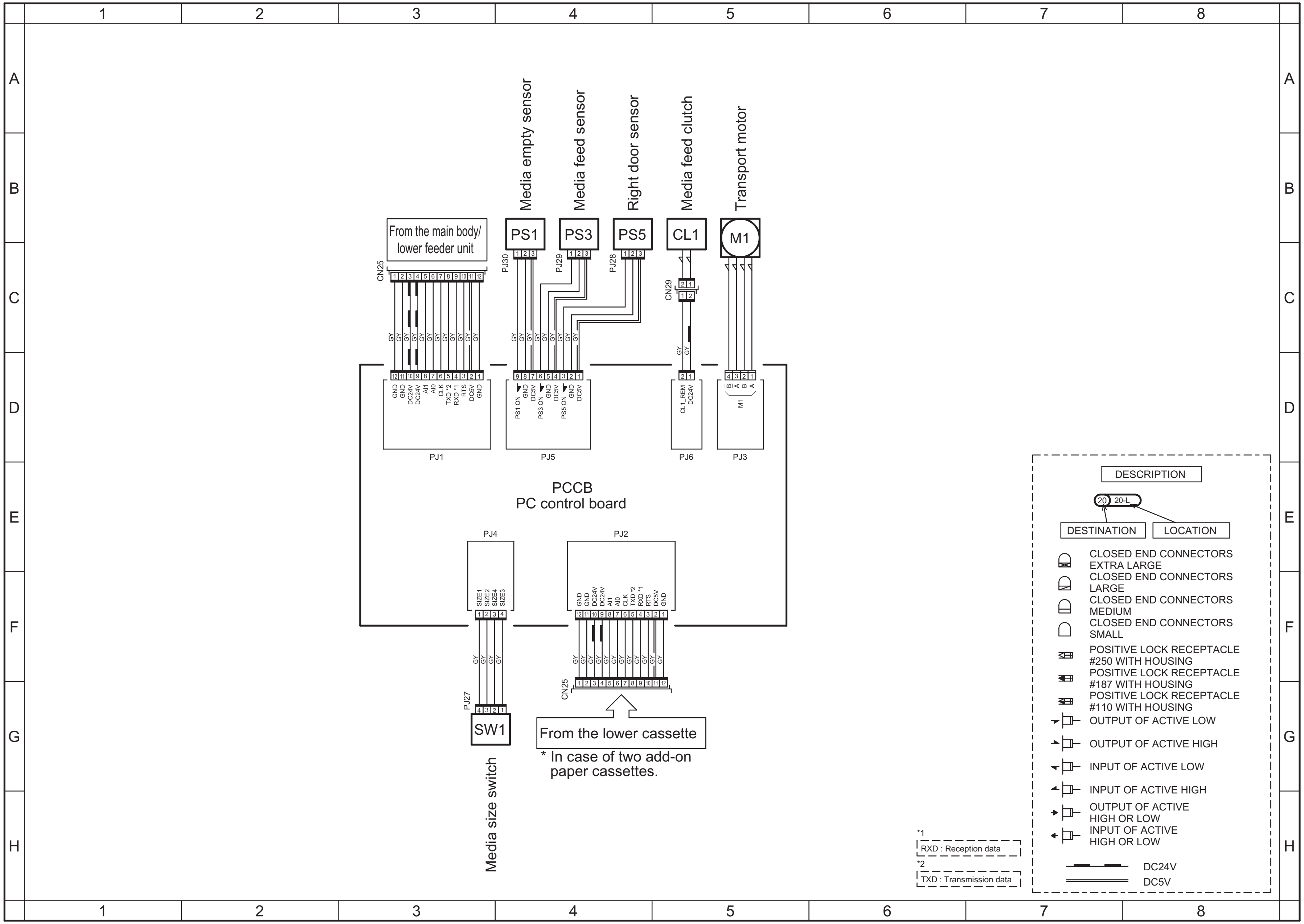
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Aug.2008

bizhub C20 Overall wiring diagram 2/2



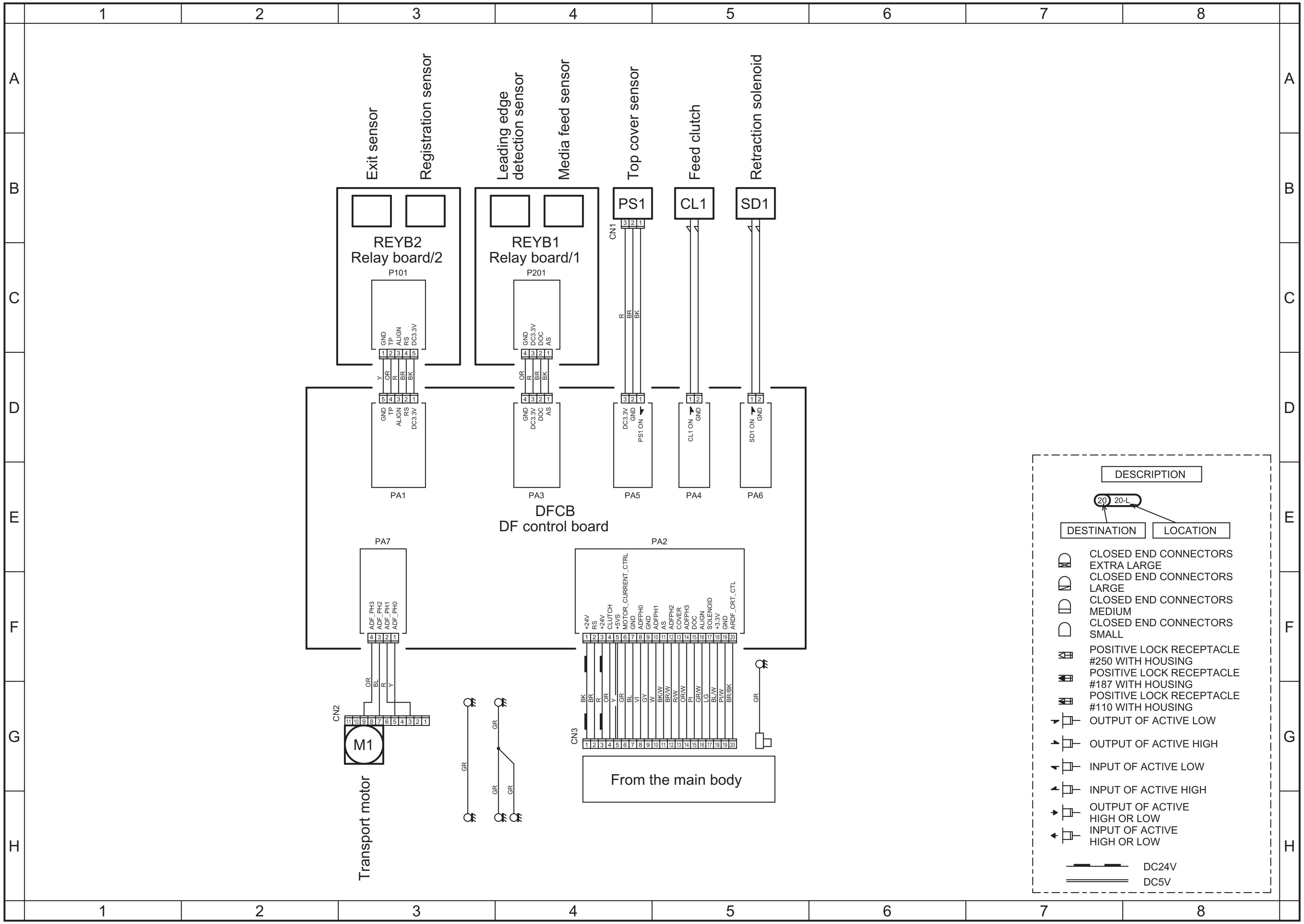
A0FD-B001-3A 2/2
Aug.2008

Lower feeder unit Overall wiring diagram



4537-B001-0E
Apr.2008

Auto document feeder unit Overall wiring diagram



A0FD-B001-1A
Apr.2008

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